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ABSTRACT

This report by a task force funded by the Ford Foundation analyzes the problems facing the nation's system of higher education in the 1970's and discusses how well the functioning of that system matches the public interest. The problems are divided in the following categories: (1) the paradox of access, meaning that access alone does not automatically lead to a successful education; (2) the lockstep of students in college, who are there for any reason but to get an education; (3) educational apartheid, with the "college age" population being rather exclusionary; (4) the homogenization of higher education; (5) the professionalization of learning; (6) the growth of bureaucracy; (7) the illegitimacy of cost effectiveness; (8) the inner direction of graduate education; (9) the credentials monopoly; (10) the unfinished experiment in minority education; (11) barriers to women; and (12) community colleges that do not fill the specific needs of their students. The remainder of the report is devoted to a discussion of steps that must be taken to remedy the situation. (AF)

Report On Higher Education

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This report was prepared by an independent Task Force funded by the Ford Foundation, and does not necessarily reflect the policies of the Department of Health, Education, and Welfare.

Report On Higher Education

MARCH 1971

FRANK NEWMAN, Chairman
WILLIAM CANNON
STANLEY CAVELL
AUDREY COHEN
RUSSELL EDGERTON
JAMES GIBBONS
MARTIN KRAMER
JOSEPH RHODES
ROBERT SINGLETON

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Elliot L. Richardson, Secretary

Office of Education
S. P. Marland, Jr., Commissioner

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MARCH 1, 1971.

HON. ELLIOT L. RICHARDSON,
Secretary of Health, Education, and Welfare
Washington, D.C. 20201

DEAR MR. SECRETARY: When your predecessor, Secretary Finch, along with Assistant Secretary Butler, suggested the formation of this Task Force, they recommended that we devote our energies to the problems facing the Nation's system of higher education in the 1970's. In analyzing these problems we concentrated on how well the functioning of that system matched the public interest.

Task Force members were chosen on the basis of their ability to think about conventional problems in unconventional ways. We agreed that no member would represent any constituency and that we would not expect to be unanimous on any issue. (We were surprised to find we were largely in agreement despite our diverse backgrounds.)

We also chose a novel form of organization. In order that each member might pursue ideas independently, each had the opportunity to have his own staff. The staff work was done almost entirely by students and interns—Pamela Booth, William Brownson, Suanne Brooks, Philip Henderson, Solomon Honig, Robert Johnston, Richard Levine, Jane Lynn, Ellen Maslow, Grady McGonagill, Earl Mellor, Sina Morgan, Lawrence Pipes, Richard Rodriguez, Gordon Strauss, Anne Trebilcock, Sylvia L. Hack, Anne Hopkins, and Judith S. Hozore.

Among many other advantages, this organization allowed us to meet with literally hundreds of students, faculty, and administrators. From the best known educators to the least known students, everyone we asked was remarkably generous with time and ideas.

When we arrived at that difficult point where speculative ideas had to be translated into a specific report, we were fortunate to have the help of Christopher Cross, Charles Lichenstein, and Laurence Lynn.

The Task Force was established with both encouragement and funding from the Ford Foundation.

Attached is a copy of our report for your consideration.

FRANK NEWMAN, *Stanford University*
WILLIAM CANNON, *University of Chicago*
*STANLEY CAVELL, *Harvard University*
AUDREY COHEN, *College for Human Services*
RUSSELL EDGERTON, *Department of Health, Education, and Welfare*
JAMES GIBBONS, *Stanford University*
MARTIN KRAMER, *Department of Health, Education, and Welfare*
JOSEPH RHODES, *Harvard University*
ROBERT SINGLETON, *University of California, Los Angeles*

* Resigned in May, 1970.

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FOREWORD

Few people realize how welcome to a Secretary of the Department of Health, Education, and Welfare are fresh insights into problems and social trends affecting education. Without them no Secretary can adequately perform his role of public leadership or make intelligent choices about priorities among programs within the Department. Yet unfortunately fresh ideas are all too difficult to come by.

I am luckier than most Secretaries in this regard because my predecessor, Robert Finch, inspired an unusual amount of creative activitiy within and outside the Department. This report is one of his legacies.

The report is an unusual document. It is provocative without being irresponsible; unconventional without making a fetish of being so; blunt and critical, yet clearly written by individuals who are higher education "insiders" deeply committed to their profession. If my own reading is a guide, it will offer many others insights which will become recognizable in terms of their own experiences.

The report asserts that our colleges and universities are not fully serving the educational needs of an expanding population of students and raises the interesting issue as to whether higher education need be academic education. It questions the trend toward the growth of large multicampus public systems of higher education and provides disturbing signs that individual campuses are losing their autonomy and their sense of mission. It points out how exclusive our colleges are, and demonstrates the value of extending higher education off-campus and into homes, neighborhood centers, and places of work. Yet it identifies these and other problems in higher education without making scapegoats of anyone. Citizens, employers, and governments are held as accountable as college presidents, faculties, and students.

The Task Force decided to concentrate on stating what the problems in higher education are and what general directions should be taken, rather than making specific recommendations addressed solely to the Federal Government. The report therefore is as much addressed to the State capitols, foundations, colleges and universities, and families concerned about higher education as it is to those of us in Washington. I found this, too, an unusual and welcome perspective.

Commissioner Marland and I believe that the report is as significant a statement on higher education as we have seen. We desire to make it available as a vehicle for widespread discussion and debate, and are therefore taking steps to publish and disseminate it through the Office of Education.

I would like not only to commend the Task Force for its effort, but also to call attention to the way the study was conducted. Mr. Newman and the other members had full-time jobs while undertaking this study and worked without a central staff or substantial resources. They began without fanfare, worked without any direction or guarantee of recognition, and wrote a report to please no one but themselves. I suspect this unconventional way of proceeding has something to do with the originality of their product.

Elliot L. Richardson

Secretary.

PREFACE

Several commissions have examined the state of higher education within the past few years. Their recommendations, ranging from expanding community colleges to spending more for research in the graduate schools, are intended to strengthen and extend the existing system.

We have taken a different approach. We believe that it is not enough to improve and expand the present system. The needs of society and the diversity of students now entering college require a fresh look at what "going to college" means.

As we have examined the growth of higher education in the postwar period, we have seen disturbing trends toward uniformity in our institutions, growing bureaucracy, overemphasis on academic credentials, isolation of students and faculty from the world—a growing rigidity and uniformity of structure that makes higher education reflect less and less the interests of society.

Rather than allow these trends to continue, means must be found to create a diverse and responsive system. We must enlarge our concepts of who can be a student, and when, and what a college is. We need many alternate paths to an education.

Why has there been so little attention devoted to these problems?

Many of the most important studies have written about higher education in terms of needs of institutions. Less attention has been paid to the problems as seen by students, or by the society which must support higher education.

The most prestigious colleges and universities have received most of the attention. The difficulties of the less selective institutions, which are more severe, have largely been ignored.

There is a widespread assumption that the responsibility of the system is to provide opportunities for successful students, rather than insuring an exciting and useful education for every student at every step.

The Impact of the New Student

It is still common to think of the typical college entrant as the student who has done well in high school and is excited by the prospect of college. We

expect that he will enjoy college life, be generally successful in his studies, and, with reasonable luck, go on to graduate school.

Yet the colleges and universities must now serve a whole new range of students. More young people now graduate from high school and more of these go on to college. Gradually, the public has come to assume that everyone who wants to go to college should be able to do so.

With today's more diverse student body, there may be no such thing as a "typical" entering student. If there is, he is a member of the majority who enter but never graduate. He did only moderately well in high school. Pressured by his parents, concerned about the credential he needs for better job opportunities, and swept along by the general assumptions of his peers, he enters a nearby community college or a large 4-year college. His hopes that this will be a significantly different and more exciting experience than his high school studies soon vanish. Within 6 months he has dropped out. His main gain is the name of an institution that he can put in the space on the application form where it says "College attended _____."

Not only must the system serve students of much more diverse backgrounds, but many students as well whose expectations of college are changing. In part, this results from the profound social changes under way in the United States (and in much of the world). This social change is characterized by a questioning of traditional assumptions, by a loosening of social constraints, and by a pushing against inhibitions everywhere. Universities and colleges have found themselves directly in the path of this revolution, and have been the first to feel its effects. Students want the university as their champion and their target, simultaneously.

While large numbers of students have found traditional academic programs uncongenial, a great many others find that the university or college community represents a life style of great appeal. Many, including numbers of the best students, view the outside world with deepening suspicion and hostility. Some stretch out their programs, others drop out but remain clustered in the shadow of the university. Rather than considering the university as an educational center, these students see it as a haven.

The process of change in the student body is far from complete. A vast range of potential students remains outside. Despite the growth in the proportion of the population going to college, traditional and artificial limits persist as to *when* in a person's life he may be a college student, and as to *what type* of person meets the established requirements. Minorities are still underrepresented. Women are openly discriminated against. Arbitrary restrictions and a lack of imaginative programs limit the opportunities for those of beyond the normal college age and of those for whom attendance at a conventional campus is impractical.

The Need for New Ways of Going to College

Behind the comforting statistics of growth are uncomfortable signs that the present system has failed to adapt. It provides for neither differing institutions nor differing styles of learning. Moreover, we have been losing the limited diversity that has existed.

The modern academic university has, like a magnet, drawn all institutions toward its organizational form, until today the same teaching method, the same organization by disciplines, and the same professional academic training for faculty are nearly universal. The shortcomings of the academic university as a model for all other institutions have been obscured by the dazzling success of the best known examples.

Not only is one campus more and more like the next, but increasing numbers of campuses are parts of larger systems. As the only institutions capable of expanding rapidly enough to meet the postwar demand, public multicampus systems have grown rapidly, until today they dominate higher education. Without quite realizing it, the States have built bureaucracies that threaten the viability and autonomy of the individual campus.

We believe that there is a compelling need for new approaches to higher education—not only new types of colleges with new missions, but also new patterns of going to college. Only when basic changes occur will many segments of the American population find attendance at college a useful learning experience. The creation of new types of institutions, valuable in themselves, will have a second benefit — their competition can be an important pressure for reform of the existing institutions.

The Limits of Present Reform

The 1950's and 1960's were decades of unprecedented development and remarkable accomplishment in American higher education. There was a vast growth in numbers of students, faculty members, and facilities. Access to college widened steadily. Inequality of opportunity among economic classes and ethnic groups, long a factor preventing social mobility, was at last widely recognized as a national concern, and steps were taken toward correction. Greater opportunity was accorded each undergraduate to influence his own curriculum. Graduate education developed a level of scholarly excellence that became the envy of the world.

The value to the United States, and, in fact, the world, of the great liberal arts and science centers, of students absorbed in studies for the sake of those studies alone, of scholarship and research in every field cannot be doubted. But these achievements should not cause us to blunt our criticisms. It is precisely because of the success of American higher education that our Task Force has felt more searching inquiry and more fundamental reform are needed, lest we attempt to meet the future with only the plans from the

past. It is because of its strength and vitality that our system can safely undertake change.

There has been reform, and its pace has been accelerated by the advent of student protest and the demands of minority groups. However, virtually all postwar reforms have been based on the assumption that growth, inner diversification of curriculums, and changes in governance will provide the needed solutions.

We are convinced that the probable success of these kinds of reform is limited, for they leave unaffected the institutionalized past decisions as to what higher education is all about. The system, with its massive inertia, resists fundamental change, rarely eliminates outmoded programs, ignores the differing needs of students, seldom questions its educational goals, and almost never creates new and different types of institutions.

The forces that shape the system of higher education are powerful and subtle. The overemphasis on the college degree as a credential, the struggle for prestige within the academic world, the resistance of bureaucracy, the limitations of present methods of funding all play a significant role.

How will new forms of learning and new institutions arise in the face of these pressures? What will make higher education more likely to reflect the real needs of the society it serves rather than its own internal interests?

We believe that only an intensive national effort can bring about sufficient change before the present opportunities for serious reform are lost.

CONTENTS

1. THE PARADOX OF ACCESS

In higher education, growth has been used traditionally as a measure of progress. The number of students entrolled, the number of institutions in existence, and the amount of money being spent on higher education all indicate remarkable growth.

> Between 1955 and 1965, the number of high school graduates increased more than 85 percent; the number of those graduates going on to college increased 110 percent.[1] Today more than half of our young people enter college; yet 20 years ago less than 25 percent entered.[2]
>
> In the last two decades the total number of institutions of higher education has increased from 1,850 to nearly 2,500,[3] and average enrollment has doubled.[4]
>
> Total higher education outlays, public and private, have been increasing at two-and-one-half times the rate of increase in the Gross National Product—which has itself grown nearly fourfold since 1950.[5]

The common plea of educators is that this growth be nurtured until we reach the goal of access to a college education for every young American, a goal finally within reach in several States.[6]

Yet access alone does not automatically lead to a successful education. It measures only the exposure of a particular age group to whatever educational institutions there are, and not the equality of the experience they are likely to find there. When the Task Force looked behind the growth statistics, they were found to mask a major phenomenon: the surprisingly large and growing number of students who voluntarily drop out of college.

Table 1 summarizes estimates of graduation rates by type of institution.[7]

These figures indicate that of the more than one million young people who enter college each year, fewer than half will complete 2 years of study, and only about one-third will ever complete a 4-year course of study. For example: at the University of Texas no more than 30 percent of entering students graduate in 4 years; after a 5th year the total is still less than 50 percent.[8] The California State College system recently reported that, as an average for all campuses, only 13 percent of entering freshmen graduate in

4 years from the college they enter; the highest was 17 percent, the lowest only 8 percent.[9]

TABLE 1.—*Variation in graduation rates according to selectivity of institutions*

Type of institution	Percentage of students graduating within 4 years at initial institution	Percentage graduating within 10 years at some institution	1st-time full-time enrollments, fall 1969	Percentage of all 1st-time, full-time enrollees
Fifteen most selective private universities.....	80–85	90–95	20, 000	1
Large State universities.....	35–45	60–70	239, 000	15
State colleges.....	15–25	35–50	322, 000	21
Public junior colleges.....	[1] 20–25	[2] 15–30	457, 000	29

[1] Graduation from the 2-year program in a 2-year period.

[2] Graduation with a 4-year degree after transfer.

NOTE.—Remaining categories of institutions are: less selective private universities (73,000 first-time enrollees, or 5%); 4-year private colleges (266,000 first-time enrollees, or 17%); 2-year private colleges (55,000 first-time enrollees, or 4%); and small State universities (116,000 enrollees, or 7%), or a total of 1.55 million first-time, full-time enrollees.

The Significance of "Dropping Out"

"Dropping out" is a pejorative term, and, we think, unfortunately so. Individuals should be able to "drop in" and "drop out" of college without social stigma. Indeed, we feel that many students are too reluctant to leave college, and that "hanging on" and "drifting" are themselves major problems in higher education.

Yet the fact that enormous numbers of students do drop out is an index of utmost significance, and, we believe, an index which has escaped public notice and educational debate. Laymen are generally astonished to hear that most students who attend college never finish. Educators themselves are often surprised when confronted with the numbers involved. But more importantly, both laymen and educators assume that to the extent "dropping out" is a problem, it is an individual, not an educational, problem. Girls wish to marry, boys want to get jobs, and "many students are not suited for college," anyway.

This view is at best only half-true. Many students do leave college for personal reasons, such as shortage of money or the desire to get a job.

But the majority of dropouts cite dissatisfaction with college and the desire to reconsider personal goals and interests as the major reasons for leaving school.[10] After reviewing the studies on dropping out and interviewing scores of students, we are convinced that "dropouts" reveal an educational problem of considerable proportions. College is failing to capture the attention and engage the enthusiasm of many students. For some, it is a decidedly negative experience.

What makes this problem so acute is that the great expansion in higher education in recent years has been in just those institutions where dropout rates are the highest—in so-called unselective institutions. Selective institutions have rigorous admission procedures that, in effect, screen *in* only those who are likely to succeed. At such institutions, "dropping out" occurs in advance of admissions.

In interpreting these findings, we can assume that society fulfills its obligation simply by providing the opportunity for as many as possible to enter college. Success cannot and should not be guaranteed. High dropout rates are not inconsistent with our commitment to broad access, but rather reflect the maintenance of rigorous academic standards and our insistence that a college degree represent real achievement.

Or we can assume that society's obligation (and its own self-interest, as well) is to provide more than just the chance to walk through the college gate—that there must also be access to a useful and personally significant educational experience.

These two assumptions by no means exclude each other. Some dropouts, for example, are flunk-outs; some clearly are not, or need not be, within alternative teaching-learning formats. Some who drop out may indeed never have been "college material" in the first place. But in the absence of some specification of what is meant by "college," the question must be asked whether different and differing types of colleges would meet student needs more effectively than do the present forms. In the few examples we have found in which the college format has been adapted to meet the needs of a particular group of students who would normally have had a high attrition rate, strikingly lower dropout rates have resulted.[11] In a broader formulation, the question is really what kind of a total "system" of higher education this Nation wants.

2. THE LOCKSTEP

While hundreds of thousands of students leave college because they find it disappointing, hundreds of thousands more enter and stay in when they might better serve their interests and aspirations elsewhere. Strong pressures in our society, some old, others recent, keep students in an academic lockstep of steadily longer duration—elementary school, high school, college, and graduate schools in unbroken succession.

These pressures take various forms:

Parents' attitudes, which reflect their own social mores rather than thoughtful assessment of the students' needs

The pressure of competition with peers, reinforced by the advice and expectations of faculty and admissions deans

The knowledge that the opportunity for college entrance is perishable, a matter of now or never

The social stigma attached to dropping out

The skepticism of employers toward any résumé that fails to show a bachelor's degree earned at about age 22

The desire to avoid the draft.[1]

As a consequence, going to college does not necessarily reflect a conscious decision to pursue a course of study or prepare for a caree; it is a socially conditioned reflex. Those particularly turned off by the college they enter solve the problem by dropping out or drifting. But large numbers stay in, thus becoming "involuntary" students.

The Effects of Isolation

The longer students remain in the academic atmosphere, the more some become dependent upon it because it is the only life they know. With the exception of summer jobs, most young people in college have no first-hand knowledge of any occupation save that of being a student. A great deal of student concern about the relevance of their education can be attributed to their isolation. Many, perhaps most, students lack the experience and sense of adult roles that would help them to see how courses can be relevant.

The lack of outside experience is beginning to have serious self-reinforcing effects on educational institutions. Colleges are staffed more and more by recent young graduates who have largely gone from kindergarten straight through to their first major jobs entirely within the framework of the educational system.[2] There was a time when most faculty could be counted on to provide students with a perspective that extended beyond the limits of the campus. No longer is this the rule. And the loss of such a perspective reinforces the isolation of the academic community.

Part-time and summer jobs for students only partially diminish their isolation. Work-study programs create the illusion that the world of work is being brought into the campus experience. On examination, however, most part-time student jobs at residential institutions turn out to be on campus in spirit, if not in fact.[3] Many of them involve make-work, and rarely do they result in a genuine appreciation of the way adult society operates. In the case of graduate students, the availability of stipends and assistanceships approaching the full costs of tuition plus expenses has increased steadily since World War II; at the same time pressures have mounted to complete the graduate degree without the interruption of work experience. Cutbacks in graduate assistance of the last 2 or 3 years are bound to change the pattern, but in ways that are not yet clear.

Gliding Past Career Choices

The sum of all these circumstances leaves many students unprepared to make sound career choices.[4] This problem is less serious in the professions, e.g., law or medicine, where students probably have an adequate idea of the nature of the profession. But in many areas, students undertake years of graduate training in a particular field only to find that they aren't sure why they've done it, or if it really is what they want for a career.[5] Many students go into Ph.D. programs in history, for example, principally because they were "good" in their undergraduate history courses. Students seem now more than ever to be making major decisions about their lives without knowing that they are making them.

This gliding past the critical point of career choices has in the past characterized the deprived rather than the privileged in our society. This was the way people decided to be miners or short-order cooks, but it was not the way those with the best of available educational opportunities chose their life work.[6]

Drifters

While student motivation is, and has always been, difficult to measure with any precision, there seems to be a steady increase in the number of those who are capable of successful college work, but have little sense of purpose in

their studies. One aspect of this condition is the phenomenon of drifting from campus to campus, particularly within large State systems. This is not to say that all transfer students are "drifters," for clearly there are various personal and academic reasons that make a certain amount of transferring necessary and desirable. But what has begun to appear in recent years is a very different phenomenon indeed.

In a study of the graduating class of 1967 in one major State college system, 30 percent had attended three colleges and 17 percent had attended four or more.[7] Each of these figures represents a 6 percentage-point increase over 1957. (Since fewer than a third of the students who enter this system graduate, these figures represent a conservative estimate of the actual amount of drifting.)

Our interviews with students who have transferred frequently indicate that many have little interest in any particular educational objective—either in learning to think or in education for the future. Their restlessness represents an academic version of the drifter, constantly seeking to be "where the action is."[8] Their focus is on enjoyment of their pattern of life as a present value, to be perpetuated as long as possible.[9] Many follow the same pattern within a single institution, particularly where admission policies restrict the opportunity to drift. Much the same attitude is also spreading within the graduate schools where more students shift from program to program. A recent study described what could be a similar phenomenon among young assembly-line workers.[10] We may be observing the first signs of a more general disengagement from the larger society.

Demand for the New Life Style

Parallel to the phenomenon of drifting and compounding the lockstep pressures are the enormous changes in life style that are taking place, particularly among the young. Hair styles and dress are perhaps the most obvious signs of this change, drugs the most troublesome. But almost everything in the student's life is affected—and among the traditional beliefs being challenged is the idea that the purpose of college is to prepare for a career in the "straight" world. Rather than accepting the freedom from responsibility and the group-oriented, uninhibited social life as a *temporary* phase on the way to adult responsibilities, some students now value these conditions as ends in themselves.

Colleges and universities have become the natural centers of the "new culture." Even a small college is a community of 5,000 or so. And a major university is a city of some 50,000 or even 100,000 (counting students, faculty, staff, dependents, and service personnel) where the new life style is the norm, not the deviation.

A significant number of students not only prefer the campus atmosphere, but fear and distrust the society whose values they question. Nor is fear too strong a word, for these students have a deep-rooted apprehension about their ability to adjust to the larger society—and about the desirability of doing so. The draft exacerbates these fears. So does the impression that satisfying jobs will not be available. (In the graduate schools, this concern is compounded by the worry that whatever job is available will be in a less prestigious institution than their present one.) But in the main, the unease stems from fear that life outside will be dull or even hostile. So students hang on. They stretch out their programs, go to graduate school, dally over dissertations, take a postdoctoral position, avoid the future.[11]

Breaking the Lockstep

Some captives of the educational lockstep surely are involuntary (just gathering the credentials that society demands) and some seem to be voluntary (out of apprehension of the outside world). But, from either perspective, we believe that a sounder pattern of higher education would positively encourage an easy, accepted interchange between various modes of learning—some of them on campus, some of them off campus.

The evidence we have of the returning GIs of World War II and, in recent years, of Peace Corps volunteers indicates that sense of purpose, enjoyment of studies, appreciation of their relevance, and ability to make career choices all improve with off-campus experience. With such experience, young people might lose some of their fear of the larger society, and the society some of its fear of them.

There are fundamental policy issues involved, as the following questions suggest:

> To what extent should the nation commit itself to increasing the number of college and university places, and the availability of student aid, if, by so doing, it provides access to a refuge rather than to an education?
>
> How can universities and colleges avoid becoming refuges and yet remain sanctuaries for serious study and reflection?

And, more importantly:

> Can we as a matter of national policy find ways to encourage broader access to higher education while also encouraging students to join fully in the life of our society?

3. EDUCATIONAL APARTHEID

The very term "college-age population" is exclusionary. It implies that young people ought to be engaged in higher education from about age 18 (although nearly half are not). It also implies that the older students should be seen as atypical—that they are trespassing on campuses where they don't belong.

By long tradition, American colleges and universities discriminate against those who are older than "normal student age" and those whose established life and work patterns make returning to a campus difficult if not impossible. This exclusion is most pronounced at highly selective private and public institutions, but, as in so many other respects, these institutions carry a disproportionate weight throughout the higher education system. Many institutions have some kind of program of "continuing education," but these are generally relegated to third-class status.

The impact of these barriers of time and place falls not only on those who are excluded. As in other cases of apartheid, the segregationists are also deprived. Everything we know about education suggests that teaching and learning are strongly conditioned by peers—that the attitudes and knowledge of students are formed as much outside class as in. Partly for this reason, colleges go through elaborate admissions procedures to select students who are not only able, but balanced in terms of regional, ethnic, and social backgrounds. Yet in no case we know of is age a factor. Socially, colleges and universities serve to separate—not integrate—the generations in American life.

The Need for Continuing Access

Questions of who needs what kinds of education, and when, are impossible to answer precisely. People mature at different ages and arrive at the point of wanting to learn by different routes. Some 18-year-olds are simply not ready for any further education, and some for whom a conventional college education would be suitable are more ready at age 30. Others with job experience, either before or during or after undergraduate training, are ready for education that may be broader ranging or may be more specific and technical than the conventional.

The critical factor in answering "when" is precisely the one that students confined by the lockstep most often lack: motivation. The presence of high motivation is common to the doctor who realizes his training has become obsolete; the blue-collar worker who never went to college but whose aspirations and self-confidence rise; the welfare mother who has taken part in a Head Start program and now wants a professional career; or the returning serviceman who has found himself and seeks a place in a society he recognizes as complex.

It is not wholly a matter of subjective change, of course. Society and its technologies also change. Obsolescence of knowledge has long been recognized as a reason for continuing the learning process in technical fields—e.g., for doctors, engineers, and scientists. In other fields, altogether new skills may be needed. A police officer may suddenly realize that his career advancement calls for an understanding of urban sociology or law or criminal psychology.

Barriers to Entry and Reentry

But realization and motivation are not enough. Immense difficulties must be overcome. For many, it is nearly impossible to suspend a career in midcourse, forego income, uproot a family, and return to the campus—and yet, even with the growth of community colleges and university branches, this is what such a decision often involves. Moreover, many higher education institutions have unwritten (and sometimes written) rules on the maximum age for beginning undergraduate or graduate programs. They fear that older students will lack the necessary flexibility or, for other reasons, will be high-risk students. Tests, previous grades, letters of recommendation—the staples of admissions—are seen as losing much of their validity in just a year or two.

There is persuasive evidence that some older students are better risks than students of normal age. The returning of GIs of World War II, as we have noted already, are often cited as more serious, organized, and interested than the younger students who preceded and followed them.[1] Almost no data are available about the performance of today's returning GIs or Peace Corps volunteers, but we asked a variety of deans and department chairmen at selective graduate schools whether, in their opinion, these recent returnees made better students than their younger counterparts. The answer was a unanimous yes. But many of the respondents admitted that they still discriminated in favor of the student with a fresh bachelor's degree. This discrimination was, if anything, most pronounced in the humanities and social sciences, despite the fact that the higher motivation of the returnee might be an obvious antidote to overall dropout rates that often exceed 50 percent in such fields of study.[2]

One reason commonly given for refusing older students is the shortened potential career for which their training will be used, in effect raising the costs of education. Medical school, with internship and residency requirements stretching 3 to 6 years beyond the M.D., is the most extreme example. But, even here, an entirely different approach is possible: to shorten the length of graduate training (on the Case Western Reserve model, for example) and provide continuing education for advanced and specialized skills. The individual can then become an effective producer at an earlier time and select his next educational steps more soundly later on.

Some recent trends offer hope of change. Open admission policies and growing acceptance of part-time students give older students an increasing chance to enroll at community colleges, 4-year State colleges, and a few universities. In 1969, there were more than 860,000 students enrolled part-time at public community colleges.[3] It is difficult to know how many were older students, but a rough estimate is between one-fourth and one-third.[4] At public 4-year State colleges, there were over 520,000 part-time students enrolled. The expanded number of campuses provides more convenient locations, allowing more adults with full-time jobs and family responsibilities to continue higher education on a part-time basis. Of those attending on a part-time basis in the types of institutions mentioned above, from one-half to two-fifths of the part-time enrollees were women. A much smaller number of private schools allowed part-time students, with only 500,000 part-time students for all types of private schools in the United States, both 4-year and 2-year, in 1969. Of these, two-fifths were women students.[5]

Yet there are limits to the conventional solution for continuing education—the effort to bring more and more "non-college-age" individuals onto campus. A campus provides, in a comprehensive package, all those services needed for acquiring higher education—materials to read, faculties to teach and administer examinations, administrators to award degrees. Why must these services be bound to the campus?

There are now wholly new technologies coming on line—cable television, domestic communications satellites, miniature computers, video cassettes—which constitute a new infrastructure for providing higher education. Already, several universities operate closed-television systems with two-way voice transmissions, which make it possible to participate in regular classes without leaving one's office.[6] Chicago City College provides a college program by broadcast television. A number of community colleges (such as St. Petersburg, Fla.)[7] and State universities (the University of Maryland, for example) now teach courses in the employer's facility—extending realistic access to higher education to workers on the job. The United Kingdom and Japan are rapidly developing the Open University, utilizing television,

local resource centers, and correspondence materials. The technology is available for revolutionizing access to higher education; only the imagination and commitment are as yet lacking in the United States.

4. THE HOMOGENIZATION OF HIGHER EDUCATION

American higher education is renowned for its diversity. Yet, in fact, our colleges and universities have become extraordinarily similar. Nearly all 2,500 institutions have adopted the same mode of teaching and learning. Nearly all strive to perform the same generalized educational mission. The traditional sources of differentiation—between public and private, large and small, secular and sectarian, male and female—are disappearing. Even the differences in character of individual institutions are fading. It is no longer true that most students have real choices among differing institutions in which to seek a higher education.

The Homogenization of Institutional Missions

When our colleges were first established, they had distinctive missions rooted in the diversity of American society. Various groups—defined by class, locality, religion, ethnic background, and occupational interest—sought to found colleges they and their children could attend.[1] Thus there sprang up a variety of institutions—Baptist and Lutheran colleges, mechanical institutes, and schools of ophthalmology, teachers colleges, night law schools, colleges for women only, Negro colleges, land-grant institutions devoted to public service, and finishing schools for gentlemen and ladies. In most cases, these institutions were supported and governed by the interests they served, and the donors, trustees, presidents, and clientele reinforced the distinctiveness of their special missions. Higher education in America was remarkably diverse, but the diversity was to be found among institutions, not within them.

This diversity, however, proved to be highly vulnerable to the social changes at work in America. With the decline of religion as a force for social cohesion, support for religious institutions declined.[2] Changing attitudes toward male-female roles weakened support for single-sex institutions.[3] As older class and geographic loyalties merged into an increasingly national, secular, and middle-class culture, the desire of many groups to perpetuate traditional loyalties through separate colleges diminished. Gradually,

institutions with special missions began to be replaced by the modern universities and by colleges which aspired to the university model.

For a long time—between approximately 1900 and 1950—the task of providing higher education was evenly divided between public and private institutions, and each type pursued a somewhat different mission. Many of the public institutions were established with a primary concern for career-related education, such as preparation for farming and engineering. Many of the private institutions, particularly the best known, had, after long histories, focused on the liberal arts, assuming that students could prepare for jobs after graduation. Hence public institutions often offered a somewhat different kind of education than private, and each type led to somewhat different set of careers.[4]

But these differences have also all but disappeared. While the trend began earlier, most of the change has occurred since 1950. Steadily liberal arts curriculums have become the standard of both public and private colleges. The agricultural college, the teachers college, and the mining school have tended to transform into the State College or further into the State University.[5] The growth of Federal support enabled many institutions, both public and private, to expand into graduate education and to hire faculties oriented to academic disciplines rather than career-related programs. Even in the new and rapidly growing community-junior colleges, two out of every three students are enrolled in a transfer program designed to prepare them for academic degrees at a 4-year institution.[6] Since 1950, moreover, the balance in enrollment that existed between public and private institutions has almost disappeared. Five out of every seven college students are now enrolled in public institutions and that percentage will continue to grow.[7]

At the same time that diversity among institutions has declined, diversity of course offerings within each institution has been increasing. Technical colleges have added the humanities; social science departments have been established; traditional disciplines have subdivided. The uniform acceptance of a diverse curriculum is an indicator of a growing similarity of mission: that of providing general academic education. The system of higher education as a whole is now strikingly uniform: almost all the institutions have the same general image of what they want themselves—and their students—to be. David Riesman has aptly described what a profound shift in the nature of higher education this has been:

> The local college was local first and a college second; the Catholic college was Catholic first and a college second; the Negro college was Negro first and a college second, and so forth. But as time went on these disparate institutions took on lives and purposes of their own. Undergraduates thought of themselves less as future women, Baptists, or teachers and more often simply as students, having a common interest with students in all sorts of other places called colleges rather than with girls, Baptists, or teachers who were not students. Similar changes have taken place at the faculty level. Even the college president of today often thinks

of himself less as the president of a college in San Jose, a college catering to the rich, or a college for Irish Catholics than as the president of an academically first-rate, second-rate, or third-rate college. Such a man's reference goup is no longer the traditional clientele and patrons of his institution or the trustees who will speak for them, but the presidents of other colleges, many of which had historically different origins and aims. The result is convergence of aims, methods, and, probably, results.[8]

The Growth in Size and Complexity

Size is often an indicator of many things—how "friendly" or "strange" a place will be, the quality of relationships one will have, how parochial or cosmopolitan the social and intellectual life, and so on. The public tends to assume that individuals selecting colleges to attend have important choices to make among institutions of different sizes. Yet every indication is that this measure of diversity is also declining.

There have always been, and are still, large numbers of small colleges—over 1,200 with enrollments of less than 1,000—while there are less than 200 with enrollments over 10,000. But these statistics can be misleading. First, they fail to make plain where the numbers of students are enrolled. Over one-quarter of all students are in institutions of over 20,000. Nearly half attend institutions where enrollment exceeds 10,000.[9]

Second, the direction of change is clear. Eighty percent of the 1,200 noted above are private colleges and these are faced with the Hobson's choice of raising tuition to meet higher costs or trying to stay competitive with their public counterparts. In moving toward higher tuition, they become less available to many students as a realistic option. In trying to hold down tuition, increasing numbers are facing serious crises—more and more often resolved by absorption into public systems. For most of the small public colleges, limited enrollments are only a transitory condition—junior colleges, State colleges, new university campuses—all are growing rapidly. Going to college today typically means attending a large, public institution. In the future, it will be even more true.

Large, or even huge, institutions bring out the best in some people—but are wholly inappropriate for others. Their essential defect is a lack of community. Students complain of anonymity; faculty members are unable to find the supposed "community of scholars"; administrators complain of communication failures and lack of understanding. Students must become specialists to participate in activities. Everyone complains of parking conditions. Such frustrations are compounded in those institutions which are not only large but whose growth has been rapid. "Old time" administrators and faculties feel outnumbered by new staffs whose identification with "their" institution and view of its purposes differ sharply. Frequently, the continuity of traditions has been broken.

Together with the growth in size, there has occurred an expansion in the range of activities which administrators and faculties perform. Colleges have expanded into universities which undertake to do both teaching and research. Universities have expanded into conglomerates which undertake to perform extensive services for governments and industry—running large laboratories, linear accelerators, overseas technical assistance programs, joint university-industry research projects, and a host of other activities. Governments today want universities to take on newly recognized responsibilities concerning the problems of the day—racism, crime, and, most recently, environmental pollution.

Each new claim is usually legitimate. But each has added to the accumulation of disparate activities, many of which bear little relationship to teaching, research, or student activities. Together, they have added a new element to the homogenization of institutional missions: the confusion of institutional priorities.

Individuals and Institutions: The Range of Choice

Individuals today have a choice among colleges which are "easy" or "tough," "first rate" or "third rate." This is essentially a choice derived from the differences in the prestige and orientation of faculties, and the consequent rigor of admissions policies and academic offerings. It is not a choice between institutions which offer different modes of learning, but between institutions which differ in the extent to which they conform to the model of the prestige university.

Individuals can choose among institutions which have different characters, derived from their peculiar histories, locale, and clientele. There are "radical" schools, "conservative" schools, "ski" schools, "party" schools, and so on. Yet even these distinctions are declining. For every school with the distinctive character of Berkeley, Antioch, Northeastern, or Harvard, there are fifty or a hundred institutions with little to distinguish them, one from the other. Some students we have interviewed see themselves as "State college students" rather than as students with an identity derived from a particular campus.

Least of all do individuals have a choice among institutions with divergent missions. For the music student who wants to be a performing artist, there are a few special institutions, such as the Juilliard School of Music. For the individual who wants to be an engineer, there are a few special places. For the individual who wants a practical postsecondary education in, say, one of the emerging fields of health care, there are a few community colleges with a particular emphasis in this area. But, in each case, the list is short.

Higher education institutions have developed a surrogate for a mission, based on the length of their educational programs. Hence the field is divided

into those institutions that see themselves as 2-year institutions, those that see themselves as terminal 4-year institutions, and others that see themselves as having, or leading to, graduate schools. Yet, characteristically, the 2-year and 4-year institutions refuse to make an explicit choice even on this issue, but rather prefer to see themselves as "keeping the options open" for students. The Carnegie Commission has recently added its prestige and legitimacy to the notion that all institutions should be "comprehensive." [10]

Colleges and universities are, to be sure, not the only American institutions which have become homogenized; changes in American society have dramatically altered the mission, size, and character of many important institutions. But the growing uniformity of higher education institutions should command special attention.

One reason is the crucial role of higher education in the socialization of individuals, particularly late adolescents and young adults. It might be argued that the function of a college is to provide a model of the values, attitudes, and habits required to fit comfortably into the dominant institutions of a homogenizing society. If that were the case, the fact that colleges and universities are striving to perform the same generalized mission might not cause concern. If, on the other hand, one believes that an important function of the higher education system is to offer *alternative* models of careers and roles, including those which challenge and change society, then the homogenization of higher education is a serious problem.

Another reason for concern relates to the tie between this function of socialization and the process of teaching and learning cognitive knowledge. Can everyone learn best in the internally diverse, comprehensive, all-purpose academic institutions we now have? There is a difference between entering social service and joining the Peace Corps; between entering military service and joining the Marines; between entering upon a religious career and joining the Jesuits. The analogy can be stretched too far, but it serves to make the point: students entering college today have few specific institutions that they can join.

5. THE PROFESSIONALIZATION OF LEARNING

The faculties educated and then hired by our colleges and universities in the past 30 years have brought extraordinary benefits to the Nation. They have produced research of enormous importance to our national growth and international position; they have made our graduate schools the envy of the world; they have educated more knowledgeable and sophisticated undergraduates than ever before. Yet these triumphs of academic professionalism have come at the expense of millions of individuals seeking an education. While the population seeking higher education is becoming ever more diverse—in class and social background, age, academic experience, and ability—our colleges and universities have come to assume that there is only one mode of teaching and learning—the academic mode.

The Academic Revolution [1]

By World War II, American higher education was in the midst of an academic revolution. Twenty to 30 universities had emerged whose graduate departments, along with the professional associations organized in the same academic disciplines, dominated all other institutions of higher education. The universities not only were the centers of the academic universe, providing the model for other institutions to follow, but they became the source of professional scholars who fanned out across the country to take teaching assignments at other universities, colleges, and even 2-year institutions. Despite the fact that the graduate training was in research, these institutions and others who emulated them became the chief institutions for certifying the competence of teachers throughout higher education. Upwardly mobile colleges strained to recruit Ph.D. degree holders to their faculties. Those with concerns other than professionalizing their teaching staffs were frequently pressured by accrediting associations to fall into line.[2]

The extent to which faculties today are dominated by academic professionals can be measured only approximately. Some products of university graduate schools do not think or behave like professionals. On the other hand, many faculty members who do not hold advanced degrees are working on them or, for other reasons, are highly motivated toward professional

status.[3] The data on the background of faculties in different institutions are nonetheless significant, and suggest that the academic revolution has been extensive. According to a survey conducted in 1969, 5 percent have a bachelor's degree or less, 23 percent have a master's degree, and the rest—nearly three-fourths of the faculty—have a doctorate or professional degree of some sort. In 4-year colleges, 6 percent of the faculty have a bachelor's degree or less, 40 percent have a master's degree, and 57 percent—the majority—have a doctorate or professional degree. In 2-year colleges, 17 percent have a bachelor's degree or less, 64 percent have a master's degree, and 19 percent have a doctorate or professional degree.[4] And, of course, the percentage of Ph. D. holders filling new openings is much higher.

The professionalization of academic faculties has shaped the character of higher education in many ways. Increasingly, being a teacher has become part of a broader role centering around one's professional colleagues—attending professional conferences, writing and reviewing articles, sponsoring and recruiting apprentices into the discipline. Faculties at universities and the more prestigious colleges have come to view themselves as independent professionals responsible to their guilds rather than to the institutions which pay their salaries. They have established at their institutions a system of tenure and promotion designed to preserve their professional objectives. Those who slight the academic obligations of specialization, research, and publication are themselves slighted in promotion, esteem, and influence.

Professional faculties have, with few exceptions, organized their institutions in ways that reflect their training and are congenial to their interests. Almost all of the 2,500 institutions of higher education are organized in terms of departments based on academic disciplines. Collectively, the faculty interest has asserted itself in favor of rounding out the campus to become similar to a broad-gauged university. Each faculty member tends to see himself as a member of a particular discipline which requires a department on campus. Status accrues to those campuses noted for research activity. Hence, normal schools and agricultural colleges have changed their names to "State College"; and, a decade later, to "State University at . . .".[5] Institutions with specialized programs—even prestigious institutions such as the Massachusetts Institute of Technology and the California Institute of Technology—have decided to round out their offerings.

This organization of college curriculums into the mold of the academic specialties has been accompanied by a strong faculty bias toward the acquisition of theoretical knowledge. In the graduate schools, the social science and even the humanities faculties have strained to build disciplines modeled after the pure sciences. In the undergraduate schools, courses tend to be taught as if the development of theoretical knowledge were the only proper business

of liberal education. Those individuals who cannot see themselves as recruits to an academic discipline are slighted in favor of the few (out of the total student population) who display an interest and talent for theoretical training.

The professionalization of faculties has influenced not only the content but the methods of undergraduate education. These faculties assume that their students will learn best the way they themselves learned best—by sitting in class, listening to professors, and reading books. All too infrequently is an undergraduate course organized or taught on the assumption that students might learn best through subjective or practical experiences. Sometimes faculty members will try to bring practitioners into the classroom to supplement their lectures, but rarely are courses organized around such individuals, and almost never are they brought into the academic inner sanctum. Rarely are there politicians or lawyers in political science departments, novelists, clergymen, or practicing psychiatrists in psychology departments, or engineers asked to help teach courses in the department of physics.[6]

Moreover, seldom do the majority of faculty members spend any time in jobs outside the university. The drive to obtain tenure plays a crucial role in the faculty lockstep. The young faculty members with an interest in spending a few years in government or industry find that such broadening experiences count for little. More important, only the most courageous dare lose their place in line or their chance at one more publication. By the time the safety of tenure is reached, most have been socialized to the prevailing faculty role.

Professionalism versus Learning

Thousands of students and many young faculty members are today in active rebellion against "irrelevance" in the curriculum. There are many sources of this tension—including the student's own lockstep pattern of college attendance—but one source is certainly the narrow professional assumptions on which the typical curriculum is based. The drive of the social science and humanities faculties to conform to the model of the pure sciences has alienated many very able students whose response, if they do not drop out altogether, has taken the form of demands for off-campus experience, the invention of anti-courses for nominal credit, and vigorous, if vague, laments that most academic study does not assist but actually enervates action and feeling.[7]

The counterculture of youth has clashed head-on with the assumptions of professional academics. Numbers of young students are simply refusing to submit to answers prepackaged for consumption by one of the conventional disciplines.

Our Task Force received a thoughtful document from a group of student leaders criticizing the depersonalization of higher education. Among other things, they said:

> In the name of efficiency we computerized our universities to a point where the proverbial complaint by students that they are mere I.D. numbers is heard so frequently that it would become trite if not for the tragic tale it tells. Furthermore, in the last few years a number of major universities have carried the process of mechanization to one of its logical conclusions. Not even courses retain a name. History 443 (a name which at least required you to write down the general subject of interest) has been replaced by 678934. The computers are then programmed to match a student's I.D. (91042) with desired courses so that a completed enrollment form reads: Name: 91042, Courses: 678934, 664324, 994562, 08573.

> It may be only symbolic but its [the university's] resemblance to automobile parts and their matching numbers says much about how we have viewed the education of our young. It also may say something about education as something that adults do *to* the young as opposed to something they do *with* them.

This clash—which preoccupied the President's Commission on Student Unrest—seems to be centered in the selective institutions where academically talented young students encounter highly professional faculties.[8] What should also command public concern, but does not, is the even larger number of individuals who enter the less selective institutions. Their encounter with the various forms of professionalism—departments, disciplines, the classroom format, the lecture, examinations, etc.—more often than not frustrates rather than assists their efforts to acquire an education.

Students everywhere provide examples of the inappropriateness of these forms. Some are narrow-gauged—their interest in learning grows out of developing a sense of competence in some few areas of inquiry. Yet they are commonly faced with a rounded curriculum and course requirements for which they have absolutely no interest. Some are oriented toward particular careers; others have no idea what they want to do. Both groups, after being in college for some time, are forced to choose a major in history, biology, or physical science, without having any idea what historians, biologists, or physical scientists do in the world, or how people in various occupational roles utilize the skills these disciplines provide.

For many students, simply sitting in class and consuming the words and wisdom which college faculties produce is not a productive format for learning. For one thing, they have a very difficult time identifying with the professor in the front of the room. For another, many students learn best through involvement in concrete situations and practical tasks. This does not mean that such students are vocationally oriented—some are, some are not. It means that their preferred medium for learning is not an abstract issue but a concrete problem, and the knowledge to be gained is subjective

as well as objective. Information is absorbed and understood in terms of its relation to their overall task.

We often lose sight of the enormous amount of teaching and learning that goes on outside our colleges: in business, government, voluntary service organizations, military organizations, and so on. These organizations are often highly effective in utilizing various teaching techniques for tasks that range from learning simple jobs to sophisticated and abstract subjects: the success of the Armed Forces in teaching new recruits to be medical corpsmen is a case in point. A few additional examples exist within our university professional schools—the moot court in law schools, internships in medical schools. But precious few of these techniques are to be found in our graduate and undergraduate educational institutions.

Our Task Force has found some genuinely innovative approaches to teaching and learning. Yet the system of higher education tends to quarantine these innovative models so that, once started, they rarely spread.

The Elitism of Present Reforms

In the last several years, largely due to the escalation of student protests, a great deal of thought and energy has been given to the problem of making colleges and universities more responsive to the educational needs and interests of students. Many campuses have undertaken extensive studies of their undergraduate curriculum. Many are in some stage of reform.

One direction which this reform movement is taking is to shift more responsibility onto the shoulders of the student and simultaneously to intensify the contact between students and faculty.[9] Lecture courses are giving way to seminars and various forms of independent study. Syllabuses designed by the faculty are giving way to courses worked out jointly by students and faculty. Requirements, even grades, are disappearing. Credit is being granted for off-campus learning.

The second direction this reform movement is taking lies in improving the incentives for faculty members to teach. Student evaluations of faculty teaching are now under way on scores of campuses. Tenure rules are being reviewed and revised to take into account the quality of teaching as well as the quality of research. Recognition and rewards for teaching, including economic rewards, sabbaticals, and so forth, are under consideration and development.

On campuses where these reforms have been implemented, students have greater responsibility for their educational programs, and see more of their teachers than they did before. Faculty members have become much more self-conscious about their roles as teachers, and, presumably, are doing a better job. But, by and large, this movement toward reform was begun at selective institutions, and has been shaped by elitist premises.

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Characteristically, many of the reforms are designed to make undergraduate education more like graduate education. The controlling assumption seems to be that, if undergraduates can be given the freedom graduate students enjoy and the personal attention which faculty members give to graduate students, undergraduate education will be substantially improved.

For some students, particularly the most able, these reforms unquestionably will improve the quality of their educational experience. But what of the individuals who may not know how to use their freedom—for whom a "structured" curriculum is essential for their development? What of the individual who wants a college education but lacks the motivation or self-confidence to direct himself? What of the individual who is "turned off" or bewildered, not by the lack of faculty attention, but by the academic mode of learning, or the traditional organization of the whole curriculum?

The absence of meaningful incentives for faculty members to teach has hurt the educational process. Yet incentives for professors to allocate more time to teaching can miss the point. The teaching, research, and outside service commitments of a professor can conflict or reinforce one another, depending on how skilled he is and the kind of problems he is working on.[10]

Moreover, the gravest teaching-learning problems seem to be at the least selective institutions where faculty members usually are rewarded for teaching above all else. The basic problem is not just to change the rules under which academic professionals teach, but to change the structure of the profession and its grip on undergraduate education.

6. THE GROWTH OF BUREAUCRACY

It is common to decry the rigidity and sluggishness of the elementary and secondary school systems. Yet few realize how rapidly bureaucratization is descending on higher education. Not only are individual campuses growing rapidly in size—the campuses themselves are being absorbed into large multicampus systems.[1] In the past, the term "college" or "university" referred to a particular institution. Now it refers to a far-flung system of campuses, each with a standardized name.

The multicampus systems now established have already reached remarkable proportions. For example: [2]

The State University of New York with 65 campuses and 314,000 students

The City University of New York with 11 campuses and 123,000 students

The University of California with 10 campuses and 147,000 students

The California State College system with 19 campuses and 288,000 students

The University of Texas with 10 campuses and 74,000 students

The State University of Florida with 7 campuses and 80,000 students

The University of North Carolina with 7 campuses and 46,000 students.

The problems inherent in the growth in size of individual campuses have been recognized, and a few notable efforts are being made to decentralize individual campuses into smaller units, or "clusters," of colleges.[3] But the problems inherent in the growth of huge, statewide, public systems of higher education—including standardization, the centralization of decision-making, the stifling of local initiative, and the introduction of new political forces into higher education—have gone almost unnoticed. Efforts are under way in almost every State to formalize the systems, and to develop stronger coordinating agencies to supervise all of higher education, public and private.[4]

Pressures for Centralization

Centrally administered, multicampus systems developed to fill a vacuum. With the increase in enrollment pressures of the postwar period, the States were the only organizations that were already directly involved in higher education and that could raise the needed revenues. (The 50 States have appropriated more than 7 billion dollars for higher education for 1970–71.) [5] The multicampus systems (or, in some cases the single major State university) were the most natural and available vehicles for the States to turn to in order to create new college places.

When budgets for higher education were small, governors and legislators were content to leave most decisions to the individual campuses; but as budgets escalated from tens to hundreds of millions of dollars, State officials became increasingly concerned about the regulation and control of higher education expenditures.

In most cases, these pressures have led to the specification of expenditures in detailed budgets. Formulas for allocating funds among institutions have been developed to make the budget process more routine. Sometimes the formula has been designed to eliminate or prevent abuses; sometimes to simplify the response to the competing demands of many campuses; sometimes to ease the annual battle with the legislature for funding. Formulas intended as a means of determining how much an institution is to receive may accomplish these goals. However, in a number of cases, formulas for allocating funds *among* institutions have led to formulas for determining expenditures *within* institutions, prescribing, for example, how many technicians and secretaries may be hired per faculty member.

Concern about regulation and control of public funds, as well as growth of numbers of campuses, has also led to the emergence of central administrations for the multicampus systems. At present, most of these central administrations are still undeveloped—but growing. In one, while the number of students increased two-and-a-half times during a period of 10 years, the professionals in the central staff increased tenfold. The budget of this staff now represents over 1 percent of the total expenditures for the system as a whole, or about one-fifth of the average budget for one campus.[6]

The Unintended Consequences

In the growth period of the 1960's, both campus and system administrators were absorbed in the task of building—building new campuses, building a central organization. Now that campuses and systems are large, growth has slowed, the central administrations have matured, and the tasks are changing from building to management. Now, as new generations of pres-

idents, chancellors, vice chancellors, and various other administrators take over, the effects of centralization are becoming apparent.

There are now statewide requirements for admissions and degrees, administratively convenient classifications of study such as "lower division" and "upper division," rules which detail operations for all teaching departments, and centralized procedures for deciding a host of nonacademic issues from parking to the selection of new furniture.[7]

One president of a campus which is part of the State University of New York pointed out to us that most administrators assume that decisions, such as determining average class size, are under his control. Yet his budget is determined in the head office; union negotiations determine the salaries of his faculty; faculty salaries, divided into the total budget, determine how many faculty members he can hire; and centrally determined administration policies set his total enrollment. Hence, his own role in determining average class size is restricted to the simple calculations of the final results.

The solidarity and cohesion of the individual campus is threatened by the new multicampus framework. The constituent members of the campus community—students, faculties, administrators, trustees—are encouraged to organize themselves "horizontally" across the system and bargain at the State level for their special interests. This is most visible in the case of the faculties which are forming statewide unions.[8] The arena in which decisions have to be made is thus greatly enlarged. Decisions taken on one campus, or about one of the constituent members of the campus community, have repercussions elsewhere. Each campus is finding it harder to work out its own problems by itself.

Multicampus systems have escalated the political stakes in education issues. As a consequence, State governors and legislators are assuming a much more active role in campus affairs. As the system has grown in power and prestige, the political importance of preventing embarrassing incidents—the hiring of a controversial professor, the disruption of a particular campus—has increased.[9] More and more statewide boards are finding that their meetings are covered by the press. Presidents and board members often find themselves cast in the roles of public defenders of their points of view and/or apologists for campus incidents. Political safety, rather than educational leadership, becomes the priority.

The multicampus systems also provide a convenient means for asserting control. In May of 1969, when the American intervention in Cambodia and the shootings at Kent State University set off a nationwide student protest, many campus presidents and chancellors found that decisions affecting their campuses were taken out of their hands and were made by State officials and administrators of the whole system. In California, the two heads of the vast university and State college multicampus systems announced that *all* the

campuses would be closed, even though there were disruptions on only *some* campuses.

Several recent studies indicate that college presidents see their authority diminishing. The impact of these changes has fallen hardest on the campus president within the large system.[10] (One interesting measure of the change is the growing use of the term "campus chief executive.") Sandwiched between faculty and students (who have bases of support beyond the campus) on the one hand, and tiers of system administrators and interventionist-minded State officials on the other, the president of a system campus is becoming less and less able to carry his own case to the press, is less and less able to build a supportive constituency for the particular institution he heads. Thus, his role has become one of the most difficult in higher education. In the future, it will be harder and harder to recruit good men for the job—and, increasingly, the job itself will require a manager rather than an educational leader—an entrepreneur or a maverick in any sense.

Back to the Drawing Boards

The multicampus systems have come about, in part, because of the perceived need to achieve effective resource allocation and the savings that result from economies of scale.[11] Uncoordinated growth might mean duplication of faculties or efforts—for example, two small law schools where one would be more efficient. To be sure, centralized purchasing of many supplies and services can save funds. A single construction department might well provide better skills at lower cost.

Yet, while coordination, rational planning, and the elimination of waste are important goals, centralization is often pursued in areas where its benefits are illusory. It is difficult to believe that decisions regarding the choice of a particular new course at one campus, policies concerning student newspapers, or rules governing the behavior of students need to be made centrally except as a response to political pressures.

We also suspect that the large system is not as good at the task of resource allocation as has been expected. The central office of the State system and the budget staffs of the State government are subject to powerful pressures for equal treatment. If campus #1 and campus #2 add a Ph. D. program in sociology, so must campus #3—regardless of the need for more departments of sociology. Thus, rational allocation of resources is less likely even though logic calls for a reduced commitment to particular fields.

It is easy to forget the difference in the value of central planning to a college or university as compared to other large organizations such as automobile manufacturers or the Army. A red car with a blue fender, or an infantry battalion without transportation, is a troublesome problem indeed. But the determinants for effective learning in one classroom have little

relationship to ything going on in another classroom nearby, let alone at another campus.

Finally, a key argument for the multicampus system is that it can have, within its central organization, the freedom from daily operating responsibilities and the expertise required to develop new ideas about higher education. By serving as a shield against undue pressure from the Legislature and the Governor, the multicampus system could give new and untried programs a chance to prove themselves.

In one sense, the multicampus system has shown part of this capability—in State after State it has done a remarkable job of establishing new campuses in the traditional format. In a few important cases—Santa Cruz, Chicago Circle, Green Bay, Old Westbury—the traditional academic format has been applied in a new physical or social setting, particularly through the use of the cluster college. Yet, only in a very few instances have there been fundamentally new approaches, such as Florida's use of television for remote classroom participation, or New York's proposal for an examining and degree-granting university. The more substantial the difference between the new idea and conventional practice, the more difficult it is for that new idea to survive in a large bureaucracy.

Rather than innovation, the skill of the large system lies in more of the same. Entrepreneurs rarely thrive in a climate of detailed budget review, pressures for equal treatment, statewide interest groups, flagship campus dominance, or concern for political expediency.

Today, there is still considerable flexibility within higher education. We still expect that college means a different experience for different students. But, steadily, the flexibility, differentiation, and individual responsiveness are slipping away. Only a determined effort can reverse this trend.

7. THE ILLEGITIMACY OF COST EFFECTIVENESS

As apprehension over the problem of college financing has become more acute, budgets have become the subject of increasing attention. But, if the subject of the budget is more common on campus, the subject of cost effectiveness remains beyond the pale. The measurement of cost and performance in higher education is somehow regarded as illegitimate. A typical case of the lack of interest in comparative costs is the recent study, sponsored by the Carnegie Commission, of plans for self-reform at 11 institutions.[1] Not once in the entire book is the subject mentioned.

We think that there are important reasons why cost effectiveness must become a legitimate subject. Thinking about costs is not simply a matter of paring budgets and making ends meet, of cutting out secretaries or not buying typewriters. It is a fundamental educational issue. Searching for more effective methods of teaching must lead us to examine the neglected questions of what we are trying to do and how students learn.

For the university as well as for society, the issue is effective use of resources. If time and energy can be saved by adopting more cost-effective procedures, those energies can be devoted to a long list of tasks now starved for resources. Many of these are suggested elsewhere in this report, chief among them being the task of tailoring educational programs to the needs of the new varieties of students now seeking higher education. Considering what needs to be done, we can afford the high cost of education, but not the low productivity.[2]

Costs and Budgets

Far too often any discussion of cost is limited only to the question of expenditure reduction. But cost consciousness goes beyond budget consciousness. The budget only permits faculty to be hired and students to be enrolled, but cost consciousness considers how these parties interact to some purpose. It is the time and talent of faculty and students which are the major costs of higher education, and a conventional budget fails to reflect whether this time and talent is used efficiently.

Concentration on budget consciousness can even be *inimical* to cost consciousness. For example, when funds for constructing new classrooms are saved by using existing ones a larger part of the day, the savings achieved—however desirable in themselves—may mute the issue of whether given subjects are best taught in classrooms at all. Classrooms at a college can be scheduled 24 hours a day, and every seat occupied, but if the classes themselves are relatively unproductive of learning, then the institution is grossly inefficient all the same.

Further confusion arises from pressures external to the institution. Growing public resentment over the cost of education has led State governments to intensify budget procedures. While it may be possible to decide in the State capitol how many teaching assistants there will be, it is impossible to decide there how to achieve cost-effective learning. Line-item budgeting may reduce expenses; it will not likely find a better way to teach a subject. But before pressures for budget control are reduced, the public needs to have confidence that cost-effective programs are being carried out.[3]

Resistance to Cost Consciousness

Thus, it is of vital importance that any mention of costs should stop evoking, as a reflex, all of the defensive arguments against expenditure reduction that have been developed over the years. These arguments, and the unwillingness they reflect to address the serious issues of teaching and learning, are an invitation to budget cutting for they suggest an indifference to how well the job is done. We believe that institutions of higher education do care how well they perform their missions. Why, then, is concern with cost-effectiveness suppressed, rarely given operational expression and somehow considered illegitimate?

One reason is that the analysis necessary can be done badly. A college is not the same as a business. There is no simple product. The measures of effectiveness may be short-sightedly utilitarian, or they may rely too much on proxies reflecting other factors beside educational effectiveness (such as measuring educational performance by the starting salaries of graduates); or cost effectiveness can be used as a weapon of one party against another rather than as a discipline for all.

There are technical problems as well. Inputs and outputs must be weighted appropriately. How much of the salary of the professor is really attributable to his teaching, and how much is a hidden subsidy for his research? How much weight, on the output side, should be attributed to a student's easily tested technical proficiency in French, say, and how much to the familiarity with French culture he gets from his French classes? [4]

Some resistance to cost-effectiveness thinking, based on valid reservations, can be overcome if the leadership to improve programs comes from within

the individual departments and schools of the university, rather than as the exercise of a central management function. Then, if there are subtleties in measuring the educational costs and results of a particular program, those in that program will have only themselves to blame if those subtleties are ignored.

An important point is that precise analysis is not necessary in order to make significant improvements. For example, at several of the universities where serious studies are underway, large differences in the cost of teaching an undergraduate in roughly comparable departments exist, differences as great as 2 or even 3 to 1.[5] While one would expect a significant difference between the costs of teaching anthropology and chemical engineering, one would expect rough similarity between costs in history and political science. While measuring the effective learning in each situation can only be done in an approximate way, to ignore the possibility of improving cost effectiveness inherent in such figures seems irresponsible.

Costs and Conflict

There is a more fundamental aspect of resistance to cost-effectivness thinking that cannot be dealt with entirely even by lodging the responsibility in the right place. Cost-effectiveness thinking inevitably puts issues of resource allocation in a competitive light. Even within an individual department, analysis will show that one way of doing things is better than another. Logically, the better way will have the greater claim. Thus, some professor is sooner or later not going to be allowed to do what he has always done because it is not the most efficient way. No one used to ask him how he spent his time (partly because they never used to pay him enough to feel entitled to ask the question). Now he will be asked pointedly. His role and independence will seem threatened, and (if he is not tenured) even his job.

Cost-effectiveness thinking will take hold when a new tradition of accepting and managing conflict replaces the old one. There has always been competition in colleges and universities. It has been channeled in the past toward achieving certain objectives; now it must be channeled toward achieving others, as well. The departmental structure of the institutions and the corresponding guild structure of the disciplines has concentrated competitive energies on relative research productivity. Peers judged who performed best and rewarded him at his institution—or saw to it that he was offered a better job at another institution.

Incentives for making the maximum educational contribution need be no more harsh or sinister than those that the faculty live with now. In fact, a new set of incentives geared to educational productivity would make the competitive functioning of the system less harsh, for it would then recognize a wider range of talents than the present almost exclusive focus on

research productivity. Ultimately, the competition that must be faced and resolved is between different models of what the university should be, what a classroom should be, what a learning experience should be.

Current Perceptions

The kind of thinking about cost effectiveness that we urge would therefore be focused on particular learning situations. It would concern itself most with how the goals of a particular course or curriculum could most efficiently be achieved for particular kinds of students. So far, most of the thinking about cost effectiveness has concerned itself with problems once or twice removed from the goals of courses or curriculum. For example, there has been interest in the question of the existence and extent of public and private benefits which can be attributed to higher education. This is important to the public issues of how much we should invest in higher education and who should be expected to make the investment. It does not, however, relate to the issue of how education can most efficiently be conducted.

A second cost-effectiveness question now beginning to be explored is the relative cost of degrees (or credit hours) in different academic schools and departments. This has *some* relevance to questions of educational practice, since one explanation of differences in cost may be that one department uses better techniques than another.[6]

We want to emphasize, however, that it is *within* individual departments and educational programs that cost-effectiveness thinking will be most rewarding. This is not simply because of the essentially political need already cited to decentralize the process. It is also because that is where the payoff is—in making it less costly for students to learn English, or political science, or electrical engineering. The notion of the "course" may itself be a spendthrift institution. The professor needs to ask whether his lectures actually teach as much as the same amount of time spent guiding the independent reading of his students, whether some kind of practicum would help them to grasp better the interrelation of different parts of the subject matter. He and others must ask if both costs and learning can be improved by changes in admission procedures that select students at a point in their lives when they are ready to learn.

There are a few examples of cost-conscious educational reform designed to permit learning according to individual styles. One is Miami-Dade Junior College, where alternatives to conventional classroom instruction have been developed to reduce dropouts.[7] An important step was the recognition that the dropout rate is a factor of both cost and effectiveness that must be considered.

Relevant work has been done in the reorganization of library services for undergraduates. Such a reorganization at the University of Michigan increased library utilization to 10,000 students per day, making the University library the busiest in the Nation except for the main New York Public Library.

We are concerned about the widespread resistance to cost-effectiveness thinking in higher education because it is so profoundly anti-intellectual. It rejects reason and it puts a low value on the time of faculty trained to reason well. Faculties are an expensive resource and concern over different ways of using their time does them honor.

We must guard against a widespread tendency to trivialize the problem of efficiency in higher education. It is not only a financial problem but an intellectual one. Questio about efficiency lead to a host of questions about teaching and learning and to the ultimate questions about the nature and purpose of higher education. These are too important to the colleges and universities—and too intellectually challenging—to be lightly dismissed as illegitimate.

8. THE INNER DIRECTION OF GRADUATE EDUCATION

The brightest stars of American higher education have been the graduate schools. Their growth, advance in scholarship, and research contributions have been the envy of the world. Since 1948, the number of doctorates granted has increased six times,[1] the amount of research funding has increased nine times.[2] During this period world leadership in graduate education and basic research has passed from Europe to the United States.

But rapid growth and the ready access to funding for research, graduate student aid, and faculty support have also brought about distortions. The graduate schools have become steadily more inner-directed and less responsive to the needs of society. There has been too much growth in some fields of low demand, too little in fields where shortages exist. Too many schools have concentrated on training researchers, too few on training practitioners. The level of excellence in graduate training is often weakest in those fields where society's needs are greatest.

The difficulties of measuring the accomplishments of graduate education and research are formidable. It has been all too easy to rationalize, rather than to face the problems. But recent crises are forcing the academic establishment to face up to its problems. The oversupply in a number of fields has become too severe to ignore. The crisis in funding of research and graduate student aid is forcing a reappraisal of goals.[3]

The Rise of the Ph. D.

The growth and upgrading of graduate education have occurred on all fronts, but have been most pronounced in programs for the Ph. D. These have grown more than twice as fast as bachelor's degree programs and far faster than master's degree programs.[4]

This growth began in the 1950's in response to well-publicized concerns over the lack of faculty to meet rising college enrollments.[5] It was fueled by the steady injection of Federal funds for research, and by State funds intended to create first-rank universities.

Internal forces gave impetus to the expansion of Ph. D. programs. They were readily compatible with the interests of the faculty, involving the most

desirable type of teaching and extending the faculty members' own scholarship. For many students, they were a natural extension of academic interests developed as undergraduates, and they offered a degree with the highest prestige within the university.

Growth occurred in every dimension. At universities already granting Ph. D.'s, existing programs grew in numbers, new disciplines were established, and old disciplines were subdivided. During an 8-year span, Ph. D. programs were added to 65 universities, many of which had previously granted only master's degrees.[6] The size and sophistication of the programs also increased with the sharp expansion of postdoctoral study for further specialization.[7] A whole new class of students, the postdoctorals, developed. In many of the most prestigious departments, particularly in the sciences, the number of postdoctoral students came to equal the number of predoctoral.

Though other doctoral programs (primarily M.D. and Ed. D.) were growing more slowly, the total number of doctorates granted grew at an astonishing rate: from 4,000 in 1948 to 25,000 in 1969.[8] We estimate conservatively that, over the same period, the number of active holders of doctorates has grown from 73,000 to 300,000, or a fourfold increase.[9]

Oversupply

It is difficult to measure supply and demand for graduates. In the last few years, it has become clear that the supply of Ph. D.'s has caught up with the demand.[10] For some fields—English, modern languages, and history are examples—there is evidence that the condition has existed for a much longer period, for some perhaps as long as 10 years. Other fields—most notably medicine—remain in short supply.

Little is known about where Ph. D.'s go after graduation. The best estimates are that about 65 percent stay in academic institutions—in teaching, research, or both. During the 1960's, this percentage was increasing with the expansion of enrollment and faculty research.[11] (While no estimates are available, the funding crisis of the last year has probably caused that trend to reverse.)

In the last few years, increasing numbers of Ph. D. holders have been unable to find places in the universities or 4-year colleges, moving down into community colleges or even high schools. This has been regarded by some as a benefit—a means of bringing a new level of scholarship to these institutions. We believe that whatever benefits accrue are outweighed by the disadvantages. Long and intensive training as a researcher is not the most suitable training for community college or high school teaching. But even more important is the tendency of recent Ph. D.'s to foster the homogenizing

trend noted above, a tendency that has some thoughtful community college presidents skeptical enough consciously to avoid hiring Ph. D.'s.

Many assume that the oversupply question will solve itself by the normal workings of the market. We doubt it. The highest growth rates in Ph. D. granting in the 1960–70 period have included those fields noted above where the effects of oversupply were felt earliest. Lewis Mayhew's study, as recently as 1968, predicted considerable further expansion. (He predicts that doctorates granted will triple by 1980. Allan Cartter predicts a more modest doubling.)[12] We believe that the growth will be much lower—but not because of any rational response to market pressures. Rather, funding reductions—only partially related to the question of oversupply—will cause slowdowns or even cuts. But there is no evidence that this will affect the most crowded fields or the least effective graduate schools the most. On the contrary, there is a sort of Gresham's law in Ph. D. programs that bad degrees drive out good ones. Difficulty in finding jobs for graduates is unlikely to make the new entrants (principally new or newly ambitious State universities) retire from the field. Rather, they will argue for more resources to compete more effectively. Instead, it is Yale, Harvard, Princeton, and Stanford which have announced plans to reduce graduate enrollments.

Waste Through Wandering

One of the byproducts of the growth of Ph. D. programs is the suction effect on students. At the more selective universities, the idea is well established that students *ought* to go to graduate school, and if one is not interested in becoming a lawyer, doctor, or businessman, the logical choice is the Ph. D. This is reinforced by the reluctance of many students to leave the university. History attracts those who have enjoyed studying history; sociology those who enjoyed their courses in the social sciences. The result is that large numbers of graduate students enter these programs without a positive identification with a career or strong personal motivation for completion.[13]

Almost everyone applying for medical school has a clear idea of what the training is like and what the decision represents as a career choice. The majority have known since the start of college—or earlier—that they wanted to be doctors; 90 percent graduate. In law and business about 70 to 75 percent complete the course of study and graduate.

The Ph. D. programs, however, particularly in the humanities and social sciences, are marked by frequent shifts from one field to another and by dropout rates that fall most often in a range of 20 to 80 percent. Even in some of the most prestigious departments, where only a small percentage of the superb pool of applicants are selected, dropout rates often reach 80 percent—despite substantial fellowship aid.[14] (Such departments usually require strong statements of fidelity to the career choice by the applicant, but

of course, students long ago divined that this was a standard requirement for filling in graduate applications.)

A fundamental difference between undergraduate and graduate education is that we expect the former to be a generalized learning experience. Sampling of many fields is, for many, a desirable, useful, educational goal. The bachelor's degree is the capstone of 17 years of generalized education. Graduate education is, presumably, training for a career. The theory that the time and cost of 3 years of graduate study are well spent on a student who drops out, or drifts into another field, seems questionable at best. We believe that after 17 years of education, students should be ready to enter careers or select programs of specific career preparation.

Meeting New Needs

Despite considerable public discussion about the role universities must play in meeting our newly perceived social needs, there have been few new types of graduate programs. The overwhelming growth has been in Ph. D. programs in traditional fields. Rather than new fields developing, the traditional ones separate more finely into subdivisions which in time gain the status of new departments. Historians have had little to do with economists. Now economic historians have little to do with either.

The pressures, particularly from the Federal Government, for interdisciplinary programs have as yet had little effect in terms of the number of graduates. The stranglehold older disciplines have on universities makes it difficult to avoid the deep ruts of conventional study.

Little progress has been made toward another pressing demand on graduate education—to train more doers rather than researchers. As the amount of research and the number of researchers has increased, and as the character of many national problems has changed, it has become apparent that, though we may still be short of basic knowledge, we are even shorter of well-trained professionals who can act on the basis of this research. Yet there has been little shift toward needed curriculum changes, or the addition of external work experiences, or any attempt to teach graduate students the skills and attitudes needed for serving society rather than perpetuating the ingrowth of a professional discipline.

Both of these new needs are complicated by the failure of a set of key graduate schools to evolve dynamically. While some professional schools—particularly in law, medicine, and business—have been gaining in academic prestige and attracting better students, schools and departments of social work, education, public health, and public administration characteristically have unattractive, second-rate programs whose graduates rarely recharge or revitalize the occupations they enter.

Why is it that these schools have not been upwardly mobile (as the business schools have)? Why do they fail to attract the most dynamic students

when their fields of interest include many of our most pressing problems? Is it because students see that these occupations pay poorly compared to law, medicine, or business? Is it .hat students feel these schools provide entry to an entrenched bureaucracy rather than an opportunity for exciting social service?

9. THE CREDENTIALS MONOPOLY

No one wants to be operated on by someone who professes to be a doctor but has not been qualified by competent authorities. Certification procedures—including the awarding of grades and degrees by colleges and universities—are a necessary part of our system of public protection and a convenience to everyone. But when the reliance on education credentials compels individuals to spend tedious hours and years in school against their interest, perpetuates social inequality, gives one group in society unique and arbitrary power over the lives of many, establishes conditions in which people will be dissatisfied and unhappy with their jobs, undermines the educational process, and all this unnecessarily—then the time has come to change these practices.

The inequities and absurdities of the current state of affairs are finally being recognized. In the expanding economy of the 1960's, the need for labor heightened awareness that formal educational requirements might be keeping individuals out of jobs. Concern for the minorities focused attention on hiring practices which seemed discriminatory. Many still in school rebelled against the arbitrary authority which the schools seemed to have over them. Articles with titles such as "Would Horatio Alger Need a Degree?" [1] appeared, questioning whether grades and degrees really relate to success in later life. Yet the credentials system continues, and, in some cases, becomes more restrictive.

Job Screening and Job Performance

College credentials are not only a highly prized status symbol, but also the key to many of the well-paying and satisfying jobs in American society. For the past 20 years, personnel managers in both government and industry have screened prospective employees on the basis of degrees—hiring those first with the longest attendance in school. Educational institutions as employers are, as one would expect, among the most insistent that their employees have full credentials. In some cases, school districts regularly base teachers' salaries on the number of credits earned toward higher degrees in order to encourage them to the maximum formal education.[2]

From the studies we have seen and the interviews we have had with employers, we believe that educational credentials are not only increasingly required for jobs, but that the requirements themselves are rising. Technological changes sometimes force skill requirements up, but our judgment is that, in many cases, these requirements are going up arbitrarily. As the supply of formally trained and educated individuals has increased, employers have simply responded by raising their standards, even though the jobs themselves may not have changed. This is particularly evident at the high school level, where the possession of a degree is a necessary admission ticket even to semi-skilled jobs; [3] yet it is also increasingly true at the college level. In some places, educational requirements for jobs vary with the academic calendar, rising as the end of the school year approaches and new graduates flood the market.[4]

While educational credentials are, in many cases, indispensable for getting a job, there is increasing evidence that they have little to do with how well an individual performs a job. A recent and instructive study of this issue was conducted by Ivar Berg of Columbia University.[5] Berg inquired whether better educated employees in a variety of occupations—textile workers, installation workers of a utility company, workers in a hosiery manufacturing plant, technicians in a paper company, secretaries, insurance agents, bank tellers, air traffic control personnel—performed better than their coworkers who had less formal education. Using a range of measures of performance—promotions, merit pay increases, employer evaluations, dollar value of insurance policies sold, etc.—Berg found that they did not, and concluded that many employers demanded too much formal education for the jobs they offer. He also found that "overeducation" was a prime cause of dissatisfaction and turnover.

One might suspect that the lack of a positive relationship between formal education and on-the-job performance might be characteristic of blue-collar and white-collar jobs but not of the professions, where extensive formal training is a prerequisite to entering a field. But, while there are obvious minimum competencies required to be, for example, a successful architect, the relationship between formal education and performance is not nearly as direct as might be assumed. One review of a number of studies covering students trained in business, school teaching, engineering, medicine, and scientific research found almost no correlation between the course grades of students in these fields and their on-the-job performance.[6]

Men who hold degrees in management are among the most sought-after of university graduates. Yet a study of the career records of nearly 1,000 graduates of the Harvard University Graduate School of Business Administration led one scholar to conclude that the academic success of these graduates was not associated with their business achievements.[7] Another study of the median salaries of graduates of the same school found that the salaries leveled off

approximately 15 years after the graduates entered business, and, on the average, did not increase significantly thereafter.[6] These studies suggest that the men who get to the top in management have developed skills that are simply not taught by formal education. Finding problems and opportunities, initiating action, and following through to attain the desired results requires behavior which is neither measured by examinations nor developed by discussing in the classroom what someone else should do.

There would be great humor in this situation were not so many individual lives so deeply affected. Colleges and universities are filled with people who seek only to be certified. Yet the grades and degrees these institutions issue are used as false currency in the employment market—they really testify to little about an individual's chance for success. (Disputes among educational institutions concerning transfer credits and credentials suggest that they themselves don't honor this currency.) Meanwhile, employers act against their own self-interest by continuing to raise the educational standards for the jobs they have to fill.

Monopolistic Practices

Credentials—in a generic sense—are awarded by many institutions. Employers often regard service in the Army, a stint in the Peace Corps, or membership on the college football team as valuable experiences, but they are not regarded as educational credentials; these can only be awarded by formal educational institutions. Moreover, the only way to acquire educational credentials is to accumulate academic credits, which, for most individuals, means putting in time at educational institutions. The bachelor's degree certifies a certain level of competency; what it really involves is 4 years at college.

Over the years, periodic reforms have been undertaken designed to speed the acquiring of a degree. In 1951, the Ford Foundation helped initiate an advanced placement program whereby high school students in their senior year could take special "college level" courses. Upon the successful completion of advanced placement examinations, these students could then receive exemption from certain courses and advanced standing in college. In 1955, this program was taken over by the College Entrance Examination Board, which has since developed standardized tests. Yet these tests are available only in certain fields and can be substituted only for particular courses—usually after difficult negotiations with the faculties concerned. They make the lockstep process only slightly more bearable for aggressive students.

There are, of course, boards and agencies for a number of professions—often backed by State law—which certify and license individuals to perform certain tasks. But rather than provide alternative routes, nearly all

of these agencies reinforce the monopoly which educational institutions have over the awarding of credentials. Medical licensing requirements are a recognized scandal[9]—but so are practices in other fields. Thirty-three States now have laws requiring individuals to possess a law school degree before being admitted to legal practice, and in 13 States, the American Bar Association must itself accredit the law schools.

The system is nearly as self-contained and self-reinforcing in a great many nonprofessional fields. There are approximately 550 licensed occupations in the United States, with the occupations licensed in each State varying widely.[10] Many State licensing boards not only have the authority to accept new practitioners into an occupation, but also to suspend licenses and oversee practices. Seldom is there consensus as to what constitutes a qualified individual. Many of the licensing boards do not use standard tests to determine technical qualifications. If an individual moves to another State, he may well have to retake whatever tests exist, or even return to school.

Should an experienced nurse's aide wish to become a licensed practical nurse, she must leave her job, enter and complete a nursing school program. Rarely is there any consideration of her previous experience on the wards. Having finally become a licensed practical nurse, she may later aspire to advance in her field and become a registered nurse. Yet to do so, she must again return to school to climb the next rung of the educational ladder, and, in many cases, begin again as a freshman.

In almost every other occupational field, a parallel situation exists. Occupations are conceived of as discrete, each requiring a certain term of formal education. Rarely is there provision for competency testing to waive requirements. Mobility is further restricted because schools are organized on the basis of administrative convenience rather than the specific needs of people. Enrollment can take place only at specified times. Night courses in many fields are diminishing.

Certification and Education: Growing Conflict

If the educational purposes of colleges and universities were well served by the monopoly they hold over the administration of examinations, grades, and degrees, it would be harder to see a way out of the current state of affairs. But they are not.

Grades recognize and reward academic achievement. Degrees identify different levels of achievement and different types of programs, and hence mark out the courses of instruction which are open to students. Both, we believe, are necessary to most educational institutions and can be used to strengthen the educational mission.[11] Yet there is also a conflict between the functions of providing education and certifying competency. The conflict is made more acute because there are no other ways for individuals to become certified.

This forced-draft education often poisons attitudes toward learning which is equated with formal education. The enormous value of a liberal education has little to do with getting a credential. Those who leave without a degree often carry with them a sense of failure. One observer goes so far as to suggest that the function of 2-year institutions in higher education is to convince students and their parents gently that they were not really suited for college in the first place.[12]

As certifying institutions, colleges have developed a host of devices—examinations, grades, academic requirements, residency requirements, and so forth—which require administrators and faculty members to exercise constant authority over the work and lives of students. As resentment toward these practices has grown, it has become increasingly difficult to combine the roles of teacher and judge. We have seen many students who have rejected formal teaching and learning altogether because they reject the arbitrary authority which faculty members and administrators hold over their lives.

Lowering the Credentials Barrier

It is time to halt the enormous and growing power which colleges and universities have as sorting and screening institutions.[13] One necessary course of action is to reduce the reliance on educational credentials as admission tickets to careers. We must develop mechanisms and criteria for measuring an individual's potential for a job that are more relevant than those now universally assumed to be valid. Some studies suggest that motivation, perseverance, and experience might be identified by new kinds of tests which employers could utilize. But far more valid, we believe, would be apprenticeship arrangements and other forms of "precareer" training, in which employers would hire without excessive regard for the amount of formal education applicants have had—and perhaps with the understanding that they will have additional opportunities to pursue formal education later in life.

Colleges and universities can do their part to reduce the overreliance on credentials. They can study what happens to their graduates, and what the correlations are between academic success and occupational performance. They can treat their credentials as internal matters, between the school and the student, and resist servicing government and industry by providing spurious predictions as to how a given graduate will fare in a new role.

The more immediate need, however, is to break the credentials monopoly by opening up alternative routes to obtaining credentials. The monopolistic power of existing colleges and universities cannot be justified on the grounds of their effectiveness in screening for occupational performance, nor on the

grounds that being the sole agencies for awarding degrees and credentials is necessary to their educational mission. Internal reforms now under way—a deemphasis on grades, more independent work, credit for off-campus experience, modest expansion in the use of equivalency examinations—are important but not enough. New paths to certification are needed.

10. THE UNFINISHED EXPERIMENT IN MINORITY EDUCATION

The year 1966 marked the beginning of a major undertaking to incorporate members of ethnic minorities into the mainstream institutions of American higher education. Prior to the 1960's, the higher education of many minorities was ignored, and that of blacks was primarily the province of the 4-year black colleges. Today, prodded by the civil rights revolution and concern for the disadvantaged, colleges and universities, from the most to the least selective, in all regions, profess a responsibility to meet the educational needs of minorities.

We as a nation are thus engaged in the most far-reaching reform in higher education of the postwar period, one that tests the capacity of our institutions to transform themselves to serve all students better. Yet, to date, only a few studies evaluating the results are available.[1]

The information on the participation of blacks—poor as it is—is better than that for other minorities. Black students also tend to be the recipients of the strongest feelings toward minority students—both of good will and hostility. Because black students have been the pathbreakers, how the experiment in minority education is judged will largely be the question of how well black students do, how they are seen, and how they see themselves.

Thus, it is primarily black students whom critics of minority programs have had in mind in implying that such programs have lowered the academic standards of institutions and seriously diminished the value of degrees; that soaring minority enrollments have denied places to more highly qualified students; and that admission of large numbers of ill-prepared (and consequently frustrated) minority students has contributed heavily to campus unrest. In each case, available facts simply do not substantiate these implications.

Soaring enrollments. The impression has sometimes been created that colleges are overcommitted to minorities and that quotas of 10 to 12 percent are common. Blacks, as a percent of total enrollment, are barely holding their own; they average only 3 percent of enrollment in predominantly white institutions.[2]

Cheap degrees. Open admissions have been held responsible for lowered standards—yet open admissions have been the practice at some State universities for many years.[3] Different criteria have clearly been used for admissions of some minority students, but there is little or no evidence of any change in degree standards. The career performance of blacks seems roughly comparable to that of other students.

Minority students and disruption. Minority students have indeed been responsible for some campus disruptions, and these seem to have made a particular impression on the public mind, but more intensive coverage of student unrest has revealed that black students, by and large, are concerned with acquiring an education; the typical disrupter is white and middle-class.

The need for a factual appraisal of such charges as they relate to black students should not, however, obscure the fact that members of other minority groups are entering higher education in increasing numbers. They are fewer, to be sure, and, in the case of Spanish-surnamed Americans and American Indians, their rates of participation in higher education are also lower than those for blacks. As a result, data providing a coherent picture of their progress are even harder to obtain. We emphasize the data concerning blacks in higher education because those are the best data available. It is not intended to suggest that other minorities and disadvantaged whites have the same needs as blacks; or that a program successful for one will work for another; or that programs for other groups should have a lower priority.

The difficulty in appraising the involvement and achievement of members of minorities is not alone the result of inattention to the facts on the part of those who are hostile. Those friendly to minority students have not been anxious to establish the facts. Proponents of the programs have avoided sober assessments of their true cost, the dropout rate, and the magnitude of the adjustment required of all parties—the institutions, the minority students, and their fellow students. Determination to profess loyalty to the idea has sometimes choked off needed debate and constructive criticism. We think it essential, despite the obvious difficulties, to estimate the degree of success so far.

Black Access to Higher Education

The simple measure of the status of blacks in higher education is enrollment; yet it can be one of the most misleading. In a confidential memorandum that reached the press, Counsellor Daniel Patrick Moynihan advised President Nixon: "Negro college enrollment rose 85 percent between 1964 and 1968, by which time there were 434,000 Negro college students. (The total full-time university population of Great Britain is 200,000.)"[4] Such a comparison implies substantial progress in educating minorities. In fact,

the absolute increase in enrollment of blacks from 1964 to 1969 was considerable; but when the growth in black enrollment is compared to growth in *total* enrollment, the gains appear much less substantial. According to the Bureau of the Census *Current Population Survey*, black enrollment as a percent of the total actually declined from 1964 to 1966.[5] Since then it has been rising, but very gradually (see table 2).

TABLE 2.—*Recent black participation in higher education as a percentage of total enrollment*

[Figures in thousands]

	Total enrollment	Total black enrollment	Blacks as a percentage of total enrollment
1964	4,643	234	5.0
1965	5,675	274	4.8
1966	5,999	282	4.7
1967	6,401	370	5.8
1968	6,801	435	6.4
1969	7,435	492	6.6

It is possible that these figures overstate black participation. Other studies show that black enrollment may be lower than Census figures indicate. In any case, while blacks have lately shared in the growth of enrollments, they have not gained in proportion to their numbers. Whereas black students constitute 12 percent of the college-age population, they still constitute only 6.6 percent of college students. Whereas black student enrollment rose by about 250,000 in the past 5 years, nonblack student enrollment rose by 2,500,000; that is, blacks accounted for only 9 percent of the enrollment growth.[6]

To measure access, one must also consider the kinds of institutions and the programs that students attend. At least until very recently, half the black students have attended predominantly black colleges.[7] Enrollment at these has been growing relatively slowly.[8] The significant change since 1966 has been in the predominantly white colleges because their black enrollments previously were minimal. While the percentage of the total enrollment at these "white" institutions still averages only 3 percent, it is visible and growing, creating a sense of barriers coming down in all sections of the country.[9]

All types of preponderantly white institutions have shared in this change, but unevenly. Many private colleges and universities and a few major State universities have taken a leadership role, with or without formal minority student programs, and have black enrollments of 4 to 8 percent. But the largest total numbers of students (and percentages of enrollments) have been

at the other end of the institutional spectrum—at the urban, open admission, community colleges and 4-year colleges.[10]

Another dimension of access is the degree to which minority students are willing, able, and encouraged to enroll in all of the different curricular programs of the institution. Black students are concentrated in a few majors, principally in business, education, the social sciences, and the non-M.D. health professions.[11] While the lack of adequate preparation in many fields can be compensated for, a weak background in mathematics and science is a recalcitrant barrier to minority students who would otherwise like to major in science and engineering. Unless some improvement can be made in the secondary schools blacks attend, the number of blacks in medicine, science, and engineering will remain low.

Achievement

Assessors of the effectiveness of the experiment in minority higher education must be wary of unconsciously reflecting or inadvertently serving the ideological interests of partisan observers on both sides.

Data on the academic achievement of blacks—as measured by grades and persistence rates—are even more fragmentary and conflicting than those on access. Most of the evidence available from various colleges shows that the average grades of blacks are somewhat lower than the average grades of all students.[12] There is a danger that we may obscure an important point in discussing the "average" of black students. Not all are risk students. Many have grades and test scores that *exceed* regular admission criteria.

The normal selection criteria for admission to college—high school grades and Scholastic Aptitude Test scores—are reasonably reliable predictors of performance in colleges for blacks and for students generally.[13] Since both measure competence in traditional academic work, and since many blacks have had little exposure to good schools, it is not surprising that high school grades and SAT scores are, as a whole, significantly lower for black entrants than they are for college entrants. However, there is some limited evidence that blacks who persist in their studies perform somewhat better in college than would have been predicted on the basis of these measures.[14]

We investigated whether "grade-bending" in favor of black and other minority students occurs—which would tend to discount some of the achievement noted above. In canvassing faculty in a variety of colleges, we found that it does. As other groups have found for years (athletes perhaps the most notably), some minority students have learned that certain courses are easy grade opportunities. However, in large universities where class size and impersonal grading procedures operate to control against grade-bending, the achievement of blacks is not markedly different from that where smaller classes are the rule. We suspect that, as minority students become a more routine part of the campus scene, faculty members will gradually come to

treat them as they do any other students. The evidence does not suggest that present grade-bending either seriously affects academic standards or is permanently entrenched.

In this appraisal we did not reopen the more fundamental debate as to whether grades adequately measure the achievement or the value of education. There is an interesting new piece of evidence, however. Brown University recently studied the postcollege achievement of high-risk students (all students, not just minorities, whose entering SAT scores were 100 points or more below the norm) and found no discernible differences from the achievement of its regular entrants.[15] The results of this study are reinforced by the general feeling expressed to us by a number of graduate school deans, faculty, and admissions officers that a remarkably capable group of young blacks from high-risk programs are now seeking admission to graduate schools, and that, when they graduate with bachelor's degrees, they tend to do well in postgraduate education.

Another measure of achievement is the number of black students who persist to the completion of a degree. The data again are mixed. Many universities show persistence rates for blacks that are lower than the average of all students; a few show higher rates. One clear finding, however, is that blacks at selective institutions have much higher persistence rates than those at unselective institutions.[16] In part, this happens because better students are admitted to selective schools; in part, because students at selective institutions have a high expectation of success, whereas at unselective institutions, dropping out is the norm. Talks with faculty at community colleges where a disproportionate amount of enrollments is black indicate a difficult problem. A great many black students register and attend classes at the semester opening, but their numbers dwindle rapidly until, within a month or so, only relatively few are left.

Special programs tailored to the needs and problems of minority students can make a difference.[17] One of the best, CUNY's SEEK Program, has had a 50 percent dropout rate during its 1st year.[18] While that rate seems disappointing, considering the effort at pretraining, tutoring, and counseling, it can be viewed as encouraging when one considers the poor preparation of the students involved and the high dropout rates for *all* students in the same institutions.

On the whole, we conclude that large numbers of black students can perform close to the existing standards at all types of colleges and universities. With well-run special programs, high-risk students are more likely to stay in college. Persistence rates for blacks at many institutions will approach the average for all students, but, at the least selective colleges, dropout rates remain discouragingly high. Grades will likely continue to be lower.[19] This fact may not have much bearing on those who persist to graduation, however, in terms of later careers.

If the national experiment in minority education is to be valid—and if it is to make further progress—educators must begin to understand what it means to *be* a minority student. Differences in cultural background are becoming more apparent (and may even be getting wider as more "high-risk" students enter), and recognition of these realities is mandatory if we are to respond intelligently to what minority students need. In our conversations with minority students and those who deal with them, we began to deepen our own understanding about some points that must be widely disseminated.

Historically upwardly mobile groups have looked to educational institutions as the principal avenue of social mobility—and the generalization holds for today's minority students in their attitude toward college access. In addition, minority students as a group aspire to more years of education than do whites.[20] Today, when college is more important to mobility than ever before, and when family pressures to succeed are so intense, this force on minority students is a crucial factor in minority education.

What distinguishes minority students from other groups that have used higher education as an avenue of mobility is that today's minorities can never really leave their communities. "Going to college" has always carried with it a measure of "you can't go home again"; but today's minorities have to live with the converse—that you can't leave your ethnic or racial identity behind.

This conflict of being caught between two cultures—that of the ethnic and racial community on the one hand and that of the national social structure on the other—forms the basic dilemma of minority education in contemporary American society.

The pressure on minority students from their own communities is not simply a matter of personal achievement. For, while these young people are often viewed as "disadvantaged" by society at large, they are viewed as extraordinarily "advantaged" by their own communities—and they must bear the dual role of paupers *and* princes. Their successes and failures are community successes and failures.

At the same time, the pressure to succeed in college for many minority students is also a pressure to give up not only community ties but also community dialects, habits, and values—and at just the time when the ethnic community is determined to emphasize and cultivate these traits as signs of a newfound pride and self-esteem. Yet few faculty and administrators with whom we have discussed these issues seem to appreciate what a cruel dilemma this is, or what a hostile and threatening environment the campus can be for a minority student. Some institutions are grappling with this dichotomy through such devices as ethnic study programs or, on a broader scale, community programs. We see no easy path ahead for its resolution.

The Depth of Public Commitment

Commitment to the ideals of minority access to higher education is essential, but it is not enough—and least useful of all is a purely rhetorical commitment. In some measure, it is a matter of how much we are willing to invest. From our discussion with educational officers and the limited data available, it is obvious that the estimates made a few years ago of the cost of achieving effectively equal educational opportunity substantially understated the true amounts. It was a brave beginning back in the mid-sixties. But now the glamour has worn off and we are able to see more realistically the dimensions of the task ahead.

11. BARRIERS TO WOMEN

The higher education community prides itself on its leading role in the fight to end intolerance in American society. Yet with regard to women, colleges and universities practice a wide range of discriminatory practices. These institutions view women primarily as wives and mothers and their education as preparation for these functions.

The Task Force has identified three major types of barriers which block full participation by women in higher education: first, overt discrimination by faculties, deans, and others acting in official capacities; second, practical institutional barriers, such as rigid admission and residence requirements, and a lack of campus facilities and services, which makes participation in higher education incompatible with many women's other interests and activities; and third, the ingrained assumptions and inhibitions on the part of both men and women which deny the talents and aspirations of the latter.

The unique role of higher education gives it extraordinary leverage to either help or hurt women's chances for equality of opportunity. When colleges and universities deny women the chance to gain skills and credentials, they increase the likelihood that women will not receive equal opportunities in all other social institutions for the rest of their lives.

Higher education exerts another kind of leverage as well. Colleges and universities take upon themselves the task of forming and sanctioning the attitudes and practices which educated people will thereafter consider reasonable. If it is fairness which they sanction, all women are helped; but if it is discrimination they sanction, all women are hurt, educated or not.

The Present Extent of Inequality

Comparisons of the participation and attainments of men and women in higher education reveal a clearly unequal pattern.

> Although, in high school, women earn better grades and higher test scores than men,[1] fewer enter college, and they attain only 41.5 percent of the bachelor's and first professional degrees.[2]
>
> Although women in college earn better undergraduate records than men, fewer enter graduate school.[3]

Most of the degrees earned by women are in a few fields of study, such as education, the humanities, and the health professions. Thus, aggregate figures on attainment of women exaggerate their opportunities in higher education.[4]

Even within those fields considered acceptable, women are confined to subordinate functions. While virtually all the nursing graduates are women, they represent only eight percent of graduating physicians.[5]

If there were any assurance that the denial of equality is rapidly becoming a thing of the past, there could perhaps be some complacency. But it is not merely residual; in some ways, it is increasing. The proportion of 18- and 19-year-old males enrolled in higher education increased 20 percent between 1950 and 1966, but the participation of females increased only 11 percent.[6] The percentage of master's degrees obtained by women reached its peak in 1930 at 40.4 percent and declined to 38 percent in 1968, while the percentage of doctor's degrees obtained by women reached its peak in 1930 at 15.4 percent, and was down to only 12.6 percent in 1968.[7]

We believe that it is not the case that opportunities exist for women which they simply decline to exercise. Rather, we find that there are specific barriers which block their progress and which will not disappear without conscious effort.

Discrimination Against Women as Students

The first such barrier is outright discrimination against women as students, especially at the graduate level. Although few admissions officers or members of graduate fellowship committees would confess to discrimination on the basis of race, many openly argue that women should be denied opportunities because they are women. For example, the Academic Senate of the University of California, Berkeley—an institution renowned for its commitment to civil liberties—recently received the following report of an interview between a social science department chairman and a women candidate for graduate study:

"I suppose you went to another college?"
"I attended U.C. Berkeley."
"But you didn't finish?"
"I was graduated with a B.A."
"Your grades weren't very good?"
"I was named to Phi Beta Kappa in my junior year and was graduated *summa cum laude*."
"You have to have 16 to 18 units of X. You don't have that, do you?"
"As my transcript shows, I had 18 units of X, mostly A's, one or two B's."
"I'm going to disallow all 18 because they were so long ago. You understand that, don't you? There's no point in trying to replace the undergraduate course in order to qualify. You could *not* do it part-time; you would have to take 18

units in one year. Then you would probably not get into graduate school. If you did, you would meet so much hostility that I doubt if you would stay in. Most women do not finish their work, and we couldn't take a chance on you. We don't want women in the department anyway, and certainly not older women. This may be unfair to you in light of your record, but we just are not going to chance it." [8]

Women's Education as a "Poor Investment"

In order to justify discrimination against women in higher education, the argument is often made that their education is a poor investment of educational resources. The argument has two parts: first, it is argued that women are much less likely to complete their training than men; second, it is argued that women who do complete their training are much less likely to use it because they are likely to marry, become housewives, and give up any idea of a career.

Both parts of the argument have much less basis in fact than is usually supposed. What basis there is seems clearly attributable to artificial obstacles that unnecessarily stand in the way of women completing and using their education, rather than to some innate disposition of women regarding their educational and career goals.

The facts tend to contradict the view that women are poorer risks than men in their disposition to complete training. The percentage of entering undergraduate students who graduate in 4 years is about 15 percent higher for women than for men.[9] As for graduate students, the record for completion is so poor for male students in the fields of the humanities and social sciences (the fields most open to women) that it is absurd to make comparisons unfavorable to women. The available data suggest, if anything, that women do about the same as men: women constituted 30 percent of graduate and professional students in 1967, but earned 35.8 percent of the master's and first professional degrees awarded in 1968.[10]

Two points may account for the impression department chairmen seem to have that women are less likely to complete their training. First, in our society, most women move where their husbands' educational and career opportunities take them. The result is that women must often transfer from one institution to another to complete their training. Women thus *are* less likely to complete their training at the institution where they began. If, in some field, they are less likely to ever complete it, this might be attributed in large measure to the unwillingness of accessible institutions to accept them as transfer students and give them the support which a nontransferring male student would receive as a matter of course.

The second part of the "poor investment" argument seems also unsupported by the facts. In 1968, 42 percent of all women of working age were in the labor force.[11] Women who complete their training do, in fact,

tend to use it, and the more training they have, the higher are their rates of participation. Fifty-four percent of the women who have bachelor's degrees are in the labor force, and 71 percent of those who have 5 or more years of higher education are working.[12] More than 90 percent of women who received doctorates in 1957–58 were employed in 1964, and 79 percent of them had not interrupted their careers in the intervening years.[13] Moreover, there is a strong correlation between the number of years of higher education and the likelihood that a woman will be working in her field of major study, i.e. the field where educational resources have been most intensively invested in her training.[14] Nor do women Ph. D.'s let marriage interfere with their productivity. Those who are employed full time publish slightly more than either men Ph. D.'s or unmarried women Ph. D.'s.[15]

Discrimination Against Women in Academic and Professional Life

In one sense, the "poor investment" argument is self-fulfilling. The normal incentives of prestige and money for active participation in professional fields are, to an important extent, withheld from women, especially married women.

Higher education discriminates against women as employees even more than it does as students. A 1966 Office of Education study estimated that, on college faculties, women comprised 32 percent of instructors, 20 percent of assistant professors, 15 percent of associate professors, and 9 percent of full professors.[16] A substantial part of these differences is due to the fact that women are made to wait longer for promotion. Women who do achieve the rank of full professor wait 2 to 5 years longer than men in the biological sciences, and as much as 10 years longer in the social sciences.[17] Moreover, married women must, overall wait 5 to 10 years longer than single women.

In professional and business life there is similarly less economic reward. Starting salaries tend to be lower. A survey conducted in November 1969, regarding jobs and salaries expected to be offered by 206 companies to June 1970 college graduates, showed a differential in the salary offer to be made to men and women with the same college majors in a wide variety of fields.[18]

Women can only look forward to dropping still further behind as their careers progress. The difference in median salaries for men and women is more than $3,000 in chemistry, physics, mathematics, economics, and the biological sciences. Women similarly average lower salaries than men in each of the academic ranks.[19] In this sense, then, women's education is a poorer investment than men's, for they are denied the same income as a return on investment. They do, however, earn much better salaries, compared to other women, the more years of higher education they have completed.

A common myth is that opportunities for women in American society, though not equal, are opening up and that discrimination is steadily declining. When we see that the share of master's and doctor's degrees earned by women was higher between 1920–1940 than it was during the decade of the 1960's;[20] and that women's median salary income, as a percent of men's, decreased by 5.7 percent from 1955 to 1968 (from 63.9% to 58.2%);[21] and that the plight of the woman in education and the job market has not improved, but worsened; and when we add to this the information that there are fewer women elected to public office at all levels today than during those same previous decades, we get an overall view that the American woman is not only failing to hold her own, but is losing ground.

The Lockstep and the Lockout

The prevailing college and university structure presents an array of practical hurdles for women. The problems of access and the educational lockstep that we have noted create barriers that are particularly difficult for women. The fact that these barriers exist today is due, in part, to a failure to analyze and understand the needs of women and, in part, to a lack of consensus that they should be removed

Rigid policies and practices pressure women into making a choice between marriage and children or advanced study and a career, causing many women to lose out permanently. Women who take time out to marry and work or to raise children for several years find it extremely difficult to return to academic life. Residence requirements, the inability to transfer credits, insistence on full-time study, lack of child-care facilities, and inadequate health services are most frequently cited as problems that keep women from undertaking or completing their undergraduate and graduate studies. Women are frequently discriminated against in obtaining fellowships and travel grants and such amenities as married-student housing.

A recent AAUW survey exploring sex discrimination on the college campus reveals that only 5 percent of the schools reporting provide any kind of day-care services for children of students.[22] Evidently, colleges that are willing to spend enormous sums on athletic facilities, used principally by men, recoil at the thought of establishing such facilities as a nursery where women can leave their children in order to attend classes

One inevitable and damaging result of this combination of discrimination and lack of adequate facilities is that women students are encouraged to conclude that they should think of themselves only as potential wives and mothers, or, at best, as teachers or nurses. Several studies confirm that even very talented women students are affected by what Mary Bunting, the president of Radcliffe, has called the "climate of unexpectation" [23] for women, and that their aspirations decline as they go through college.[24]

Society's Assumptions About Women

The most formidable barrier to full participation by women in higher education is the assumptions of both men and women about the role of women in our society. These assumptions are internalized by individuals and incorporated into the structure of our institutions without being obvious. Instead, they appear to be the natural outgrowth of what society believes to be women's proper responsibilities.

An important fact about the barrier created by these assumptions is that there is, as yet, no consensus that it should be removed. While some Americans regard discrimination against women as gross injustice and detrimental to the whole society, others see it as a perfectly natural division of social roles based upon inherent differences between men and women. There is today a deep concern about the decline of family life as the main focus of American society. Consequently, any discussion of equalizing opportunities for careers for women unleashes powerful and deeply held feelings among many people.

It is becoming apparent that the prevailing view of women's appropriate role in society has been based on ignorance and misunderstanding, on a failure to think of women as individuals with intellects which need stimulation and egos which need satisfaction, as among men. We are belatedly realizing that when women's minds are awakened by an excellent education, they are not going to be completely fulfilled by merely being gracious shadow-figures for their husbands, if they choose to marry. Lack of outside, independent interests often has a detrimental effect on the husbands and children of able, intelligent women as well as on the women themselves. As with minorities, the corrosive effect of repression and lack of opportunity for women goes far beyond the individual.[25]

Colleges and universities have an unparalleled opportunity to affect the status of women. Their role in the transmission of values and the preparation of men and women for careers makes this opportunity a responsibility that these educational institutions must not ignore if they are to be responsive to the needs of society.

12. EVERYBODY'S ANSWER: THE COMMUNITY COLLEGE

The most striking structural development in higher education today is the rapid growth of 2-year institutions. These include vocational-technical schools, branch campuses, and community colleges—the last of which are clearly the most significant. In 1968, two million students—25 percent of all higher education enrollments—were in 2-year institutions, and over 80 percent of these were in community colleges.[1]

Enthusiasm for the community college is spreading. The Carnegie Commission on Higher Education has issued a major report proposing that there be comprehensive community colleges within commuting distance of every potential student by 1980.[2] The report goes even further. It notes that a major barrier to the development of community colleges has been the existence of the competing types of 2-year institutions, and recommends that these competing institutions either broaden their programs (e.g., become comprehensive community colleges) or at least not stand in the way of the community college movement.[3]

We believe that community colleges have exciting possibilities, but our study has led us to believe that their promise is rapidly being undermined. The public, and especially the 4-year colleges and universities are shifting more and more responsibility onto the community colleges for undertaking the toughest tasks of higher education. Simultaneously, the problems we have already identified—the poor match between the student's style of learning and the institution's style of teaching, the lockstep pressure to attend college directly after high school, the overemphasis on credentials—are overtaking the community colleges and rendering them increasingly ill-equipped to perform the immense tasks they have been given. The 2-year institutions are not yet set in concrete, but the molds are being formed. Already, community colleges have been converted in fact and in the public mind from community institutions to "junior colleges"—kid brothers to the 4-year institutions whose interests they serve.

The Promise of the Community College

Community colleges are the leading edge of the effort to extend opportunity for higher education beyond the elite to all citizens. This implies a

mission of educational experimentation which could lead these institutions in highly varied and distinctive directions. They are also, by virtue of their geographic base, community institutions—and this, too, implies a mission of community orientation distinct from most other institutions of higher education.

Community colleges could serve their communities in many ways. They could enable the local community to develop new social ideas and the goals and technology for handling its special local problems. Most of all, community colleges could provide courses and formats of education which are suited to the interests and needs of particular clienteles. A community college could be a commuter or residential campus, or a holding company for several very different kinds of educational enterprises.

We assume that whatever course it chooses, it wants to avoid being either a repetition of high school, or an institution so determined to be all things to all students that it evokes no response at all. Yet this is, in most cases, what is happening.

The Junior College Scenario

The community college movement is a State-by-State phenomenon, far more advanced in some States than others. Six States—California, Florida, Illinois, Michigan, New York, and Texas—account for two-thirds of the total community college enrollment; California alone accounts for one-third.[4] There is no even, national pattern to the emergence of community colleges, but there are common elements in their development in leading States. These constitute a discouraging scenario—involving the conversion of promising new institutions into glorified high schools or lower-division appendages of the 4-year institutions.

Community colleges generally began as extensions of high schools. In time, they became autonomous units governed by local boards. We believe that, at this stage, many community colleges might have taken root as local institutions performing a range of educational tasks related to community needs. Yet the States soon moved in to establish junior college systems. Typically, there are two steps involved in this process: the adoption of a State plan "fixing" the role of the community college; and the establishment of a centralized State agency to represent community colleges and affect their development.[5] These steps are augmented by the pressure from State 4-year college systems for uniform requirements for transfer.

One role that has been assigned to community colleges is to extend the opportunity for education beyond high school. As a result, they are seen as "13th and 14th grades." Great attention is paid to keeping open two tracks—one to employment through vocational training, and one to further academic training and later transfer to 4-year institutions.

Yet, for most who enroll at community colleges, neither course is appropriate. Though two-thirds choose the transfer program, few enjoy, excel at, or persist in academic studies. Only a small percent actually complete their course and transfer.[6] Vocational programs are seen by students as intended for "dumb kids," as a permanent confinement to the enlisted ranks. The student who wishes to start immediately on a career finds himself confined to the least stimulating jobs and blocked from later education toward a bachelor's degree (unless, of course, he is willing, after 2 years of college and several years of experience, to begin again as a freshman). Little effort has gone into the development of programs that fully engage the student's attention and allow him to develop his career and education in stages.

The second role designed for the junior colleges is that of being the first 2 years, or lower division, for the 4-year institutions in the State. Statewide planning groups charged with designing the new systems of 2-year institutions are often dominated by a higher education establishment. Their version of the junior college mission is to have them be the lowest rung in the higher education ladder—a rung which will take the brunt of the enrollment pressure (a pressure they have helped to generate by repeated calls for broader access).

This role is enforced in several ways, but particularly (as in California) by restricting admissions to 4-year institutions but not to the junior colleges. This is accompanied by strong pressures from within and without the institution to articulate the junior college curriculum with that of the 4-year colleges and universities.[7] As a result, according to a recent survey, while junior college courses vary from emphasis on immediate job preparation to preparatory courses for a baccalaureate degree, the academic bias clearly predominates.

A second consequence of assigning to the junior colleges the role of screening students to see which are capable of "more advanced work"[8] is the stratification of higher education along class and racial lines.[9] There is already a tendency for junior colleges to enroll the student whose father is a skilled, semiskilled, or unskilled worker, and the 4-year colleges to enroll the student whose father is in a professional or managerial position. Black students already represent a higher percentage of community college enrollments than they do of 4-year college enrollments.

Rewriting the Script

The "junior college scenario" is thus one of the transformation of community institutions into amorphous, bland, increasingly large, increasingly State-dominated, 2-year institutions which serve a number of interests other than that of their own students. No longer are they small in size.

Community colleges now have an average enrollment of 2,500 students. Almost 5 percent have enrollments over 10,000.[10] Most are growing rapidly and, were it not for the high dropout rates, enrollment pressures would be far more severe.

Academic leaders in 4-year colleges and universities see them as buffers which will allow their institutions to preserve their " academic integrity" and concentrate on what they like best. High school officials see them as institutions which can relieve high schools of the burden of preparing students for meaningful careers. The public sees them as fulfilling a major social commitment to educational opportunities for all—without realizing that the majority of college students never complete their course of study.

Yet the junior college scenario described above—which has nearly been played out in California—need not be continued. Within existing junior colleges, there are individuals already fighting the trends. A recent survey of community college faculty members, which asked what they would like to have their institutions provide in higher education, revealed that more faculty members requested increases in occupational programs, community services and adult education than increases in lower-division academic programs.[11]

There is time—but not much time. Graduating Ph. D.'s, unable to find jobs in universities and colleges and now moving into the junior college market, will add to the trend toward the conventional academic format. Enrollment pressures are forcing abandonment of the concept of the intimate campus. States are eagerly beginning to plan for "their" junior college systems, and the Federal Government is under increasing pressure to finance the junior college movement through State-formula grants—a mechanism guaranteed to replicate the junior college scenario across the Nation.

What is needed are community colleges that fulfill the promise of their name—colleges organized to meet the specific needs of the students they serve.

13. CHANGING COURSE

Preconditions for Action

The beginning of the decade of the 1970's seems a time of unprecedented crisis for higher education. After a long and satisfying period of growth, high public esteem, and ever-increasing financial support, higher education now faces a period of student unrest, public antagonism, and financial uncertainty. Something has gone wrong. Continued growth and prosperity will not come as easily as had been expected. There is growing recognition that higher education needs reform.

The major impediment to change is the set of assumptions on which educational policy is based. There is a conventional wisdom which holds that we already know what the issues are; that all we need is a commitment to action. But the concentration on these issues has often blinded us to other and more fundamental problems. Thus it is argued that the task is:

To expand our present system to provide each young American with a chance at entrance.

Rather, we believe that, without major reforms, simply expanding the present system will not provide meaningful education for the ever-broader spectrum of students gaining entrance.

To maintain diversity by insuring that we continue to have both public and private institutions.

We believe public and private institutions are becoming more and more alike. Real diversity will require altogether new educational enterprises, both public and private, that are meaningful for today's students.

To meet the demand for relevance in education by developing new curriculums.

We doubt whether many students have had sufficient exposure outside the educational system to know what a relevant education might be. Both students and faculty need more experience away from the campus.

To continue to improve the level of professional scholarship at our colleges and universities.

We believe our colleges and universities must be less concerned with academic prestige and more concerned with becoming centers of effective learning.

To achieve the maximum coordination of higher education programs within each State.

We believe that the drive for coordination is leading toward large, centralized multicampus systems. The identity, integrity, and chance to explore new directions at each campus must be enhanced now before the opportunity for this is hopelessly eroded by growing bureaucracy.

To obtain more money for higher education.

We believe the academic community must assess how effectively available resources are utilized.

To expand the number of community colleges as rapidly as possible to absorb the growing numbers of students who want to enter college.

We believe that community colleges should not be organizations that absorb the leftover problems from the more prestigious segments of higher education, but must develop their own distinctive missions.

In the past, national and State policy for higher education has been largely a matter for the experts. Public support was assumed and, in fact, was always forthcoming.

The assumption of unquestioning public support is no longer valid. The turmoil of recent years has caused many to question what was once accepted. Today, the most pressing issues are not internal within higher education but involve broad social decisions regarding its role in contemporary America, decisions in which the public must have a voice. The resources required already exceed 20 billion dollars, or more than 1 dollar out of every 50 spent in the entire economy. This unprecedented commitment cannot exist by public tolerance, but requires positive public support.

To regain positive public support, higher education must break free from the conventional wisdom and examine itself critically. The preceding sections have attempted to analyze some areas where the conventional assumptions fail to match reality. These questions (and many others not included) must become issues of intense and open discussion. There is now an unusual, but fleeting, opportunity for serious reform. For a few years, while there is self-doubt in the academic community and uncertainty about the amount and form of public support, new directions can be established. Then the calm of business as usual will return, and the opportunity for change will pass.

To reform itself before becoming hopelessly bogged down, to gain the solid support it requires to play a central role in American life, higher education urgently needs a sense of realism and a sensitivity to public concern as it recharts its future. The next sections contain our suggestions for new directions. Because that recharting must involve all parties—the Federal Government, the State governments, the colleges and universities, the public—we have addressed these generally and not any one party.

New Educational Enterprises

We believe that the foremost task for public policy is to create conditions under which new educational enterprises can be founded and can endure.

The majority of citizens can benefit from an appropriate education beyond high school. But the present trend is for college to become a single type of institution which offers only one mode of acquiring skills and knowledge. While most students in selective institutions respond well to this mode, most students in nonselective institutions (a far greater number) do not. Moreover, there is growing evidence that skill and interest in this academic mode may have little to do with effectiveness in life. In this, there is a troublesome and costly paradox: The expansion of American colleges and universities is failing to help the majority of those individuals to learn for whom the expansion was designed.

With a few notable exceptions, the most sweeping reform is at the selective institutions, while it is at the unselective that the need to develop new approaches is the greatest. Even if the effectiveness of teaching at these institutions could be greatly improved, we believe that about half of the entering students would continue to find the present academic format unattractive. And many students who have developed the necessary academic skills to succeed in the present format would prefer other approaches if they were available.

What Is A New Enterprise?

A new educational enterprise might be an offshoot of an existing institution or a completely new institution. (While both new institutions and new units within established institutions are able to serve effectively as the cutting edge of change, there is a tendency for existing institutions to co-opt any really different approach, gradually imposing constraints that restore a condition of sameness.)

New enterprises might take a variety of forms, but would include:

A single mission or set of related missions

An educational format other than the classroom lecture-reading format that now prevails.

In addition, they might well have one or more of the following elements:

A different concept of what constitutes a campus

A diversified faculty that includes members whose experience ranges beyond that gained in the traditional graduate departments

Acceptance of experience as a legitimate part of education.

There are now few programs or institutions which meet these conditions. Of the few we have seen, the College for Human Services in New York has impressed us the most as showing the possibility of changing along many dimensions:

The students are from low-income families and are typically 10 to 15 years older than the normal college age. About half do not have a high school diploma. They are selected primarily on the basis of motivation.

The curriculum is organized around the professional skills to be learned, includes work experience, is shortened to 2 years, and concentrates on learning to serve the community. Traditional subjects do not appear as courses in the traditional disciplines but as responses to needs developed by the students as they progress.

The faculty and staff are an amalgam of graduates of traditional colleges and graduates of the College for Human Services, supplemented by faculty from surrounding institutions and professionals from the community.

The agencies at which the students work are drawn into the training and become part-time educational institutions.

In addition to utilizing a new educational format, the college constitutes an alternative path to a professional career.

This and other approaches we have encountered, such as the work-study approach for technical training at Northeastern University in Massachusetts and the small-group-centered, community-problem-oriented format at Staten Island Community College, clearly seem to create interest and persistence on the part of the students far greater than would be expected if they attended conventional colleges. Yet these remain relatively isolated models.

It is difficult for a Task Force such as ours, a State board for higher education, or a multicampus system to design such models. More often, as in the three cases above, they are the creation of a persistent and imaginative educational entrepreneur. The problem for public policy is to create the conditions under which a range of new enterprises can flourish. Present patterns of public funding, the practices of accrediting agencies, and the

growing bureaucracy in higher education all impose formidable obstacles which must be overcome.

New Enterprise Funding

We recommend that specific programs of funding be established that are directed exclusively to encouraging new enterprises. The most effective form of such funding would be special programs that allow educational entrepreneurs direct access to competitive grants. These grants should be awarded in response to the best proposals, and made for a sufficient time span to prove out a new approach.

There are many considerations involved in establishing such programs, but several strike us as particularly important:

> The private foundations and the Federal Government have had the most experience with the competitive grant approach, and have had some notable successes in establishing new enterprises. (The College for Human Services described above was founded on a grant from the Office of Economic Opportunity.) Yet both—particularly the Federal Government—have failed to develop the requisite sense of boldness and mission. Nor have they devised the imaginative grant review mechanisms which will prevent their programs from being captured by established claimants for funds. Participation by imaginative reviewers from outside the educational field is one partial solution which we strongly encourage.
>
> State governments have almost never utilized the competitive grant approach in providing funds for higher education. Because of their important and growing role, we believe that the States should undertake to provide part of their funds in his form. The States are particularly important to the less selective colleges and institutions interested in vocational and career programs which often have limited access to the Federal Government or the large private foundations.

One other approach to the encouragement of new enterprises that more closely fit student needs is to provide much larger resources to students and allow them to create a "market" for education, a concept that has received considerable attention in elementary and secondary education. Such an approach assumes many things—rational and intelligent consumers, considerable information about alternative choices, etc.—and has many built-in problems. One is that the students must control a sizable portion of the funds available to institutions in order to have the power to effect change. The power to influence the institutions will be much greater if part of the funds accompanies the student but goes to the institution, that is, $2,000 will have

more impact if $1,000 goes to the student and $1,000 goes with the student to the institution.

Still, the difficulties of creating strong enough "market" pressures to make a significant change in institutions are great. We believe that the basic concept is so important—and desirable—that the approach should be tried first in some specific area. Graduate education is particularly suited to this approach, and experiments might well be developed in this area.

Revision of the Role of Accrediting Organizations

In the name of protecting the standards of education, regional and specialized accrediting organizations pressure new institutions to develop faculties, buildings, and educational requirements on the pattern of established conventional colleges and universities. Moreover, these organizations—dominated by the guilds of each discipline—determine the eligibility of these new institutions for public support. We believe that (1) the composition of established accrediting organizations should be changed to include representatives of the public interest; and (2) Federal and State governments should reduce their reliance on these established organizations for determining eligibility for Federal support. (The Regional Examining Universities mentioned below offer one alternative criterion for recognition by funding agencies. Institutions whose students score well on these examinations might well become eligible for support.)

Opportunities for Entrepreneurs

For innovation to occur, energetic, imaginative individuals must be attracted to careers in higher education and to the entrepreneurial task. Reform and even some innovations can be planned and managed from the command posts of the existing system—such as the new form of education and certification by external degree initiated by the New York Commissioner of Education; but most real innovation in higher education—as in other walks of life—will spring up from within and from below because some determined and imaginative individual has committed himself to a new idea. The magnet for attracting such an individual into higher education is opportunity.

The process of recruitment and advancement in academic administration is not nearly so routinized as, for example, in government bureaucracies, or in the elementary and secondary school systems. There is a very traditional route to a college presidency that runs through a departmental chairmanship to a deanship and finally to the president's office. Faculties, unlike elementary and high school teachers, can gain fame and success—and build empires—but primarily in the fields of their research. But higher education is not as open to individual entrepreneurs as are other fields and careers (for example, the law, or certain areas of business and public service), and so entrepreneur-

ship in teaching and learning or in educational organization, as distinct from research, goes relatively unrewarded. To make higher education a place "where the action is"—not only in research but teaching and learning, as well—is a central task of public policy.

Breaking the Pattern of College Attendance

Some colleges are now moving in the direction of relaxing barriers to non-standard admissions and transfers, providing opportunities for part-time students, and caring about individuals beyond "college age" who are seeking higher education, but these are gradual and marginal reforms. We believe that the time has come to halt the academic lockstep and reconstitute our colleges and universities as educational institutions for individuals of all ages.

Such a change would have the following benefits:

Students entering college would have experiences outside formal education which would strengthen their motivation and increase their ability to choose "relevant" courses of instruction.

Entering and leaving college according to one's individual needs would be socially *legitimate*. Involuntary students would be encouraged to leave—while individuals who really wanted formal instruction would be encouraged to enter.

College would become a place for integrating—rather than separating—the generations.

Costs would be reduced—for students would be more effective learners, and colleges would be more effective centers of learning.

Such a break in social patterns will be extraordinarily difficult to accomplish. Any effort to do so runs counter to the massive social assumption that to be in college is the most acceptable thing one can do at age 18. Individuals who choose to break the lockstep deny to themselves for a period the many services which college provides—including the opportunities for dating and marriage. They compete for jobs and interesting experiences on the outside without the labels and credentials which colleges and universities provide. And they take the risk so often pointed out by parents—that they might never return to college for formal education.

No one policy or programmatic change, no one institutional reform, will itself be sufficient to break the pattern. But a number of things can be done, each valuable in itself, which together will have a cumulative effect. We recommend:

Undergraduate and graduate admissions policies should be changed to favor students who have had experiences outside school; and to admit students without requiring that they forfeit their acceptance unless they

immediately matriculate. Graduate schools (particularly in the humanities and social sciences) where "hanging on" has especially high personal and social costs, should consider requiring a break in college attendance of 1 or 2 years as a condition of admission.

Financial aid to students, likewise, should be awarded so as to encourage students to have experiences outside formal education. Discrimination against part-time students should be ended. Colleges and other sources of financial support should consider ways to vest aid in students who wish to enter, leave, and reenter school; and ways to give credit to students who choose to engage in public and social service projects before or during the completion of their formal higher education.

New forms of educational subsidies should be developed which will provide "second chance" opportunities for college education to individuals who do not go to college immediately after high school. There is a range of social devices and sources of funds—pension funds, the social security system, education banks which generate capital through the credit market—as well as conventional scholarships which could be established to overcome the perishability of college opportunities.

Educational internships in government, industry, and social service, cooperative education programs, work-study programs, and the like should be greatly expanded. Public funds, on a matching basis, can be used to encourage internships and other types of informal higher education, much as present manpower programs now involve subsidies to employers for the training and retraining of individuals for jobs in the labor force.

Taken together these changes may help create a climate in which college attendance is more closely coupled to a student's readiness to learn. Only when college is perceived as readily available at a later age will it be set aside by many at the traditional age.

New Resources for Off-Campus Education

We believe it is time for a different approach to making higher education more available and more stimulating for those people unable to attend a college full time. Over the years, there has been a growing recognition of the need for easier availability of educational opportunity. This has led to the expansion of extension courses and the development of evening programs at the new open-admission colleges, with a resultant doubling of part time enrollment in the last 10 years.

But the usefulness of these programs has been artificially limited by their relegation to second-class status within higher education, and by insistence

that they replicate the traditional on-campus experience as completely as possible. Almost all assume that any student, who, through part-time study, develops a serious interest in working toward a degree, will transfer to full-time, on-campus status. As yet, the present system of higher education is oriented to the young and mobile.

It is time to do away with these limitations. What is needed is not just gradual extension and expansion of the present form of continuing education, but new structural approaches in parallel. We propose that the resources for education provided as a package by the college (formal instruction, reading, libraries, examinations, degrees, etc.) be provided to the community as separate services in order that individuals and groups can find their own way to an education.

We believe there are literally millions who can benefit from new approaches to an education. The preceding sections have identified some of these:

Young people who choose not to go to college or who choose to leave in the middle of their college program but who want some contact with higher education.

Women who choose both family and education.

Those needing professional training for new careers.

Workers already involved with jobs and families.

Urban ghetto residents lacking the finances or self-confidence to go to a campus.

Those who find the conventional college education unsatisfying or unsuited to their needs.

If separate organizations are established that provide the traditional functions of the college directly to the community, individuals can fashion and legitimize their own programs. Groups of housewives, professional societies, students alienated from existing institutions, indigenous minority organizations, or business firms can develop their own informal colleges.

Regional Examining Universities

While at first glance the functions of a college seem inseparable, closer examination would indicate that their separation is not only possible, but would have advantages. For instance, colleges in America now monopolize the function of giving examinations and providing degrees. We propose that equivalency examinations be developed so that individuals can receive credit for skills and knowledge acquired in a variety of ways. We further propose that new degree-granting institutions be established which could not only administer these examinations but also grant college degrees.

The college degree plays too large a role in American life. Much can and should be done to reduce its influence with employers. Eliminating the monopoly of degree-granting now held by our conventional colleges will not only help in this process, but will also ease many of the stresses at the colleges caused by concern for obtaining a degree rather than an education.

We believe that one way to achieve this is to create new regional examining universities. These institutions would be degree-granting and examining institutions alone—they would not offer courses but would administer examinations and grant degrees. To insure that these degrees would be accepted as equivalents of existing college degrees, representatives from the most selective universities should be associated in their administration. The United Kingdom has recently established an institution somewhat like this—the National Council for Academic Awards—which has already granted over 25,000 degrees. Since our own study began, the State Department of Education in New York has announced that consideration is being given to a similar concept.

Regional Television Colleges

Many approaches based on new technologies have seemed to come to fruition slowly after first being oversold as revolutionizers of the classroom. Television, after a long and difficult start, is now an educational medium overdue for serious use. Breakthroughs, such as inexpensive tape and playback equipment, regular use of satellites, and growing use of cable television, permit new flexibility. The recent successes of TV—"Sesame Street," the Kenneth Clark *Civilisation* series, the remote classroom programs of several engineering schools—have overcome much of the inertia and prejudice stalling its use.

As one means of utilization, we recommend the establishment of regional television colleges whose mission would be to develop and provide higher education through the medium of television. The essential prerequisite for these colleges is that they be total commitment institutions—not faculty members simply giving lectures through a new medium, but combinations of scholars, producers, directors, artists, and scriptwriters. A logical extension of their capabilities would be the operation of tape libraries to provide materials for wide use in the home, the firm, the traditional college, and elsewhere.

Given the development of such institutions as these, one can visualize the opportunity for many new forms of learning:

> The use of cable TV to provide local origination, large numbers of channels, and low cost

Professionally prepared taped programs circulated to community colleges so that the faculty in those courses, freed from the need to lecture, could devote themselves to followup seminars and tutoring

Businesses or government agencies combining on-the-job training with taped programs and tutoring, providing employees with a college-level education and, through an examining university, a degree

Groups, such as minority organizations, anxious to run their own college, but lacking the expertise and resources, tying their own efforts to community-provided educational resources.

Individuals developing their own educational programs.

The Informal College and the Tutor

If some of the major resources required for acquiring a college-level education, such as those described above, were available in the community, we believe a wholly new approach to the concept of "faculty" could develop. One can visualize the growth of tutoring as a profession—qualified and certified teachers providing both small-group and individual instruction.

Even more important might be the development of informal colleges organized in much the way that medical clinics are now, perhaps best described as learning clinics. Each might be owned and operated by a small group of "faculty" members, licensed as professionals. Some learning clinics might specialize only in the humanities—others in engineering. Some might see as their clientele the housewife interested in a liberal education, others the disadvantaged student anxious to gain a start toward a professional career. Some learning clinics might specialize in developing their own way of teaching subjects to people turned off by conventional classes—a clinic, for example, that concentrates on how to make mathematics exciting for those who have avoided it all through school. The possibilities seem without limit. One might even imagine a learning clinic providing both individual tutoring and small-group seminars as supplements to the taped programs it provides over a local cable TV network, with its students obtaining credentials from a regional examining university.

Strengthening Campus Autonomy

During the postwar period, two significant trends have changed the role of the individual campus. First, the rapid growth in enrollments at public colleges has outstripped enrollment in the private sector. Second, public campuses, which previously viewed themselves as autonomous and distinct organizations much like the private colleges, today are grouped into multicampus systems where pressures for centralized decisionmaking and bureauc-

racy are growing. These pressures have accelerated the trend to homogeneity, diminished the sense of campus identity and solidarity, eroded the role of the president, encouraged the rise of systemwide interest groups, and set the stage for the politicizing of the university.

The growth of these systems and the resulting budget and political problems make it ever more difficult for even the most enlightened State administration to avoid a damaging and self-reinforcing cycle. With larger size, certain goals become more important, e.g., matching facilities to the flow of students, rational allocation of resources, and control of costs. Since individual campuses have often shown little interest in these problems, there is a temptation to make the decisions centrally, either by a multicampus board, the legislature, or the Governor. Since the problems of achieving effective learning lend themselves poorly to centralized and politically based decisionmaking, these efforts are usually frustrated, leading to still further attempts to determine the course of events centrally.

To reverse this cycle, we believe it is necessary to create conditions that encourage maximum initiative at the individual campus, in directions leading toward publicly established objectives. A new approach to both State funding and State governance can be used to help create these conditions.

Recasting the Role of the System

At present, what discussion there is about governance at the State level is focused on extending and consolidating multicampus systems, and achieving greater coordination of both public and private colleges. We believe serious study should be given to the opposite point of view. What gains (and risks) would there be in breaking up large systems? What are the advantages of pluralism of several systems within a State? What can be done about reversing the trend to central control within systems?

This discussion has thus far been dominated by concern for the risks inherent in uncoordinated activities: duplication of programs, uneven standards, or politically embarrassing incidents. But these must be weighed against the risks of stifled initiative, lack of differing approaches to meet the needs of differing students or local communities, or the politicizing of higher education.

There is obviously no simple solution to an organizational problem of this complexity. As a minimum, every effort should be made to revise the organizational structure of these systems in order to provide the greatest opportunity for on-campus leadership, and to minimize the interference of political bodies with detailed operations.

One limited approach would be to establish a statewide board for higher education and a separate board for each campus, with a careful definition of

the powers to be exercised by each. The State board might then be charged with the responsibility for establishing goals and standards, negotiation of the budget with the legislature and, in turn, with each campus, and coordination within the system. Each campus would also have its own board, responsible for governance of that campus, selection of the president, review of programs within the statewide guidelines, etc.

In each case, the makeup of the board is crucial. Events of the last few years have made plain the dangers of the politicizing of boards. There is a compelling need for diversity in the method of appointment to both statewide and campus boards, so that some members might be

Appointed by the Governor, as is generally the case now

Elected by alumni

For the campus boards, selected by appointment from the local community

For the campus boards, selected by the statewide board.

The use of such a multiple board system might help restore autonomy to the campus, and safeguard against the involvement of political bodies in detailed operations. But, for its successful use, the statewide board needs the means to assure a responsiveness to the overall goals it establishes, whether these be greater attention to new approaches in teaching undergraduates, new emphasis on training and research in the delivery of health care, or reduction of the resources devoted to overcrowded fields of graduate study. This is an area where the carrot of funding may be more effective than the stick of direct controls.

State Use of Project Grants

We believe that State governments should utilize the project grant method of funding for a significant portion of the costs of higher education. Mentioned above is the use of the competitive project grant system as a means of establishing new enterprises. Here, we have in mind a broader use.

To date, Federal project grants have been the most effective means of encouraging responsiveness to changing problems in society (and the only means that has proven effective in ending obsolete programs). While Federal funding has the attribute of remoteness, its main effectiveness lies in the widespread acceptance of the project grant, obtained on a competitive basis and terminated when its purposes are achieved.

Most State governing agencies view themselves as the owners and operators of a single university organized into separate campuses, institutes, extension programs, etc. Funds are provided by a detailed budget negotiation in which the central authority is one of the main participants. So far, this approach, because of the pressures that develop both from within and with-

out, has done little to encourage each campus to develop its own plans for evolving to meet the changing needs of its community. Even those statewide authorities most determined to govern directly find it impossible to cut off a Ph.D. program where the number of graduates exceeds any expectation of needs.

If, instead, the State (operating through its higher education board) would view itself as a funding agency responding to proposals from individual campuses, flexibility and coordination could both be enhanced. Each campus needs the assurance of a base budget, but probably at least a third of the funding needed could be supplied on a project basis. The influence accompanying both the base budget and the project grants would allow State authority the necessary power to establish whatever guidelines are desired.

Institutional Grants That Accompany Students

We also recommend that both the State and Federal governments provide funds to the institutions (both public and private) in the form of grants that accompany certain categories of students. All institutions need some flexible funding, some means of responding to new ideas or differing circumstances. The amount of flexible funding available is steadily declining.

Providing funding through grants accompanying students ("portable grants") has the advantage of encouraging a sense of competition and a willingness to change as society changes. Given some thought as to methods, it might even serve, as noted earlier, to encourage those founding new educational enterprises.

There is little chance that such grants would encourage colleges to excessive catering to the whims of students. There will continue to be more students than places, so that most colleges will continue in a seller's market. Having enormous inertia, colleges and universities are hardly likely to go overboard. Rather, the question is whether such grants will be significant enough to effect decisionmaking. But, since present funding patterns provide a negative incentive to campus authorities toward responsiveness and change, even a modest positive incentive is an improvement.

A common argument we have heard is that many of the problems of the multicampus system in encouraging new and responsive changes stem from limitations on funding availability. But the trend toward centralization and bureaucracy became evident during the 1960's, when State and Federal funding grew at the greatest rate ever. We believe that the time to reverse the present trend toward centralization is now or the chance will be lost for a long time.

Expanded Noncollege Opportunities

The most cursory discussion with students forces one to recognize that many are in college simply for the lack of something else to do. We believe that there must be expanded opportunity for the young to engage in meaningful tasks outside college.

Many who enter college or who can earn a bachelor's degree and go on to graduate study are encouraged to do so by social pressure or the fear that their opportunity is perishable. We have proposed that both they and the colleges would be better off if they were to spend time engaged in society until they were ready to learn. College is not the only place to learn how to think, to participate, and to accomplish.

But a major inhibition is that most students assume there are few meaningful opportunities for young people. This is not to say that jobs are not available—after all, the majority of students who enter college drop out and are absorbed in the job market. Rather it is, first, that the perception exists among students that no jobs exist and, second, that most jobs available to the young are dull and unchallenging. A widespread belief among students is that the lack of jobs for the young is a result of an automated economy that can no longer use their services (despite the absorption over the last decade of far greater numbers of those with lesser skills than the average college student). Ironically, many see the determined and costly efforts of American society to expand college opportunity as an establishment plan designed to hold students off the job market.

But what jobs are available are generally pedestrian in nature and a gross underestimation of what the young can do. Almost all employers view a bachelor's degree as some sort of minimum credential indicating ability to think or do.

These problems are compounded for a group of students—those interested in opportunities that involve social problem-solving. A growing number of young people, including many of the best students, are less attracted by the idea of working for a living than they are by the idea of doing something socially useful. They frequently view the early years of their lives as the time to dedicate to social reform before settling in to a career.

In proposing new opportunities for the young, most thought has turned toward design of nationally run programs—from some form of national service to new versions of volunteer agencies such as the Peace Corps or VISTA, e.g., an ecology corps or the new Conservation Corps. We believe such programs have inherent difficulties·

> There is a basic conflict as to whether the program is to help the volunteer or the target group.

There is a question whether the program should attract students from selective or nonselective institutions– those socially motivated from the middle class or those job hungry from the less advantaged.

As national programs age, they become bureaucratic and less appealing to the young.

Volunteers, particularly in social problem-solving programs, want to engage in political action, which agencies want to avoid.

Therefore, we recommend that efforts to expand noncollege opportunities be directed away from large, federally run programs into two other areas.

The greatest opportunity lies in the restructuring of the existing tasks within industry and government (and even the university) so as to eliminate artificial barriers and utilize the talents of youth through:

Part-time hiring, eliminating the idea that only the two ends of the skill spectrum can work part-time, professionals as consultants and the unskilled as hourly labor

Internship programs that operate year round rather than just during the summer, so that real tasks can be assigned rather than make-work

Apprenticeship programs that utilize an old concept for new tasks in all types of jobs—white-collar, blue-collar, professional

Review of credential requirements, as has been done in the drive to encourage minority employment but on a broader scale

Joint work-study scholarships, where the student obligates himself to his employer for 2 or 3 years in return for financial aid.

The second opportunity lies in the encouragement of the growing number of attempts to develop indigenous voluntary organizations devoted to social problem-solving. We believe that Federal funds would be better spent through the establishment of an agency or foundation designed to aid these organizations than by the operation of large Federal youth programs. Such an agency might provide modest grants to selected programs that utilize young people.

Many of the problems noted above would thus be minimized or eliminated, motivation increased, and costs and political risks reduced. As new social concerns became institutionalized, Federal funding could move on to new organizations at the cutting edge of society's problems.

With more attractive opportunities outside the academic world, fewer young people would enter college simply for lack of a better alternative.

Diversifying the Faculty

Most students entering higher education today are not academically oriented. Yet the professors who teach these students are increasingly the

products of a single narrow form of graduate education. Whereas the need is for individuals of broad experience and ability, those in faculty positions are increasingly graduate Ph. D.'s oriented toward scholarship, not teaching; toward departments and disciplines, not the choices students face; toward theory and explanation, not concrete problem-solving.

A first course of action is for colleges and universities to leaven their faculties with practitioners who are outstanding in their jobs, and eager to bring ingenuity to bear on transmitting their own knowledge and confidence. In the prestigious institutions, such individuals are occasionally brought in—and held at a distance—as guest lecturers. We believe that they should be given full status within the institution. In less selected 4-year colleges and community colleges, where scholarly interest cannot be assumed on the part of students, such individuals should play a large part in making decisions about the shape of the educational program.

A great many changes in current practice will have to be made in order for such recruitment to become normal and accepted. It will not be easy to find the kind of motivated individuals outside the system who will have the requisite talents for the teaching task. This is not only because they will be scarce in some fields, but also because mechanisms do not now exist for their recruitment. We believe the following steps will help:

The exemption of special chairs and other categories of positions from the usual academic criteria for recruitment

Part-time arrangements for teaching faculty and flexible scheduling, e.g., to permit evening and Saturday courses, so that practitioners will be able to combine teaching with other responsibilities

Forthright resistance to standardized work rules, undifferentiated pay scales, and other practices which reduce the flexibility of institutions to hire different kinds of faculty members and involve them in different ways in the teaching process

A revision of standard tenure policies, leading toward short-term contracts for at least some categories of faculty positions.

We also believe that the flow of talent should go the other way as well—that faculties now in institutions should be encouraged to gain outside experience. The effect of the present arrangements is that young faculty who want to, dare not, while older faculty, who can, no longer wish to. A young faculty member dare not lose his place in the line for tenure or fail to publish the additional work on which it may depend. By the time that hurdle is passed and a leave of absence would be without risk, scholarly habits and associations fill his universe.

The chief obstacle to enriching the nonacademic experience among faculty will be the resistance of the current generation of faculty members. Moves

in this direction will violate some of their deepest convictions. They have fought hard for the advantages and standards of professionalism from the beginning of their own graduate training. For any serious change to take place in undergraduate education, there must be change in the graduate schools which train the undergraduate teachers.

Here the best hope is a new generation of graduate students. If tomorrow's teachers have broken the lockstep between college and graduate school, they will have a far better perspective on the kind of training needed in order to become effective college teachers. They will seek admission to graduate programs which take seriously the potential of task-oriented projects, internships, and actual teaching experience for learning what a college teacher needs to know.

The kind of graduate program these students are likely to demand might well run counter to two reforms of graduate education now being widely urged:

> First, programs to shorten the doctorate are urged as a correction to the tendency of many graduate students to prolong their studies indefinitely, for reasons cited elsewhere in this report. We accept the view that graduate education should not be prolonged without necessity, but we also believe that, to obtain the right combination of experience to prepare for college teaching, some graduate programs might require added periods of time.
>
> Second, it has been urged that a Doctor of Arts degree be awarded on the basis of graduate work short of the dissertation. If this teaching degree involves no other change but removing this one task-oriented part of the typical Ph. D. program, the change would be in diametrically the wrong direction. What is needed are more projects which focus all of the competence of the student on a given task, not fewer.

If graduate students in the future have the experience and perspective to demand less exclusively academic programs, they can transform graduate education—if they are also given the means to make their demands felt. As we have noted elsewhere, a promising way to make higher education continuously responsive to changing social needs and purposes is for the student to carry with him a scholarship or fellowship and a cost-of-education grant to the institution of his choice. Under such an arrangement, new graduate programs could pay their own way by attracting students in search of less standardized graduate training. Graduate education is, even now, the best place to start some serious experiments based on this model of institutional responsiveness.

Next Steps in Minority Education

Almost every adverse condition that is discussed in this report—particularly the professionalization of learning, the homogenization of institutions and the overreliance on credentials—bears most heavily on minorities. Consequently, the recommended new directions—for new educational enterprises, resources for off-campus education, diversified faculty, a new view of professional education—are all the more urgent in meeting the specific needs of minority students.

But specific additional steps are also needed. First, we must clear away the confusion that exists. The Nation has made a recent crucial commitment to the entry of minority students to all levels of higher education in all areas of the country. Despite the importance of this commitment, the radical change from past practices, and the strong feelings engendered, little effort has been made to evaluate the results to date. As a consequence, the subject is surrounded by misunderstandings.

We believe the public cannot afford to evaluate this effort in rhetorical terms alone. Therefore, the next steps must include:

widespread dissemination of the modest amount of information now available on the numbers of minority students enrolled, their persistence, and their academic performance

an immediate effort to collect much more data, to evaluate what practices have been effective and what have not, to estimate the true costs to both students and institutions, and to develop more effective programs

because of the intense feelings surrounding this subject which inhibit clear understanding, a major national study of minority participation in higher education and its impact.

From our study, we came to see several important directions. First, community colleges should be viewed as an important, but not as the sole, avenue of entry to higher education for minority students. Dropout rates for all students at these colleges are high, and the climate of low expectation undermines the confidence of many minority students in their academic abilities. The value of the Associate of Arts credential is yet unproven. Moreover, minority enrollment all across the spectrum of colleges and universities is important not only because of higher persistence rates of minority students at 4-year colleges, but because of their need for improved access to graduate schools and to fuller participation in American life generally.

Second, most minority-student programs, through recruiting, tutoring, counseling, etc., attempt to adapt the minority student to conventional colleges. More ingenuity and effort must go into experimenting with varying forms of education that adapt college to the minority student. New kinds of

inner-city institutions must be created, with special curriculum and faculty. One potential new approach to supplement conventional colleges may be greater use of television coupled with neighborhood tutoring centers as described above.

Finally, the Nation and its leaders must have the courage to make a realistic and publicly stated recommitment to broadly based minority education. Now that we have 5 years of experience, the initial moral fervor has died away and the obstacles, costs, and resentment are fully visible. The public is under the impression that more has been invested with less result than is really the case. We are convinced that the returns on the investment made so far are greater than that for comparable investments in educational opportunities for students in general. It is time to build on our experience to date and move forward to broader and more effective programs.

Achieving Equality for Women

We recommend a national effort to broaden and diversify the participation of women in higher education and to make higher education more responsive to women's needs.

The first and clearest course of action is to end all discrimination on grounds of sex:

> Women should be admitted to all levels of academic study in all fields on an equal basis with men.
>
> Women should receive equal pay for equal faculty rank and be considered for promotion and tenure on the same basis as male faculty members. Endowed chairs should be available to women as well as men.
>
> Given past discrimination, there must be an affirmative effort—not merely neutrality—to recruit talented women for graduate schools, higher faculty and administrative positions, and boards of trustees.

Women's rights have become a national issue. Consciousness of the extent of discrimination is increasing. Yet our study found that discrimination against women, in contrast to that against minorities, is still overt and socially acceptable within the academic community. We conclude, therefore, that Federal and State governments have a particularly important role to play. Governmental leadership is needed in publicizing information concerning the extent of discrimination. Governmental programs, such as fellowships to students and contracts with institutions, are important vehicles for ending discrimination and should be vigorously employed.

A second course of needed action is to undertake reforms and innovations which will remove the barriers to women which are built into the institutional structure of higher education:

Requirements for residency, full-time enrollment, credit transfers and the like should be overhauled to accommodate the needs of many women for flexible scheduling.

Student aid programs and credit arrangements—which are often administered to conform to the requirements mentioned above—must similarly be redesigned with the needs of women in mind.

Facilities should be provided which give recognition to the elementary fact that a woman is not a female bachelor. The establishment of child-care centers is perhaps the most important practical step to be taken, but other facilities such as access to housing arrangements and health services are needed.

Many of the institutional innovations which we discuss elsewhere in the report are particularly important to improving the prospects for women. Women's rights advocates have tended to focus their attention on the discriminatory aspects of the existing system of higher education. Yet if new institutions and new programs could be created (such as those described above), many of the existing structural barriers themselves could be eliminated as obstacles to participation. Home- and community-based programs and a respected system of equivalency examinations and degree-granting institutions could make it possible for more women to resolve the conflict between their roles as wives and mothers and their aspirations for intellectual and social development outside the family.

There is, finally, a third course of action required of higher education: to lead the effort to understand and rethink the role of women in American society. Achieving equality for women involves not only specific institutional changes, but also subtle but fundamental changes in attitudes. Because of the leverage they exert on all of society, colleges and universities have a greater responsibility than other institutions to play an exemplary and leadership role.

We believe that colleges and universities should consider introducing courses or programs in female studies as a way to combat the myths and stereotypes about women. Beyond this, the overall curriculum should be reviewed in terms of its relevance to women. Rather than the usual program which progresses from generalized courses to a major field and then to professional training, we believe that many women would benefit more from a program that offered career-oriented training from the beginning. Women could then combine work or the pursuit of a career with raising children, and could return later for additional study in more general liberal-arts areas.

Colleges and universities must also seriously consider the unconscious social, as well as educational, functions they provide for women. If young girls in college are seeking not only knowledge but a meaningful social life outside the home and neighborhood, if housewives returning to school desire

involvement in something outside the family as much as the contents of a particular course, then programs should not be designed merely to serve the overt interests of women in furthering their education.

The distress which now afflicts so many American women will only be alleviated when they are able to perceive themselves, and to act, as complete human beings with a wide range of acceptable social objectives open to them. Whatever choice a woman makes—whether to focus on her role as wife and mother, or to pursue a career, or to combine the two—she will be able to do so with the confidence that she, not society, is controlling her own life.

Reviving Institutional Missions

Again and again, in the identification of problems and discussion of responses appropriate to them, our Task Force has arrived at the same conclusion—the time has come for a determined effort to strengthen and differentiate the missions of our higher education institutions.

The pressures on institutions that have led to the steady diffusion of their missions are numerous—and overwhelming:

> The shifting social and financial base for higher education has undermined support for institutions concerned with the particular needs and interests of any one group.
>
> Academically trained faculties have brought to nearly all undergraduate institutions a uniform organization and mode of teaching.
>
> Enrollment pressures have greatly increased the size of individual institutions.
>
> Pressures from many sources have increased the range of operations that institutions perform.
>
> The Federal Government has encouraged many universities to become huge conglomerates, operating laboratories and other projects only tangentially related to teaching and research.
>
> State governments have assigned roles to whole classes of institutions in an effort to systemize the provision of higher education throughout the State.

In addition to these pressures, the diffusion of institutional missions has occurred because so few people have challenged the basic direction in which higher education has been heading. The public has assumed that the needs of students for educational choices can be satisfied through comprehensive and complex institutions which offer a range of courses of instruction—without asking whether the institutions themselves have to be diverse before students will have meaningful options. The affluence of higher education

in the decades of the 1950's and 1960's eliminated the necessity of institutions to ask themselves tough questions about where they are going and what they do best.

There are enormous costs built in to the present direction—costs to the students whose needs cannot be met by large, rootless institutions; to the faculties and administrators who no longer feel part of an ongoing enterprise; and to the American society, which is less and less able to hold higher education institutions accountable for specific tasks, and less and less enriched by diverse institutions pursuing their own visions of excellence.

Eliminating Peripheral Activities

The first course of action is for universities to free themselves from responsibilities which are clearly unrelated to their purposes as educational institutions. Some colleges have made commitments which stretch beyond their educational mission, but it is primarily universities which have undertaken to manage activities which are only marginally related to their reason for being—government laboratories, low-cost housing projects, publishing companies, etc. Each of these satellite enterprises requires the time and commitment of the institution's top policy-making and management staff—a resource that today the university can ill afford to devote to what are really nonuniversity problems.

For some institutions, the problems of disengagement and reorganization will be severe, since the peripheral operations they run provide a major source of revenue. Hence, ways must be sought to cushion the effects of the change. We believe that governmental aid should be provided to facilitate the transition of such activities to new authorities.

Focusing on Educational Missions

A second course of needed action is for all higher-education institutions to reexamine their academic programs in the light of their goals and aspirations. We are unimpressed with the sterile discussion of the past as to whether an institution should orient itself to teaching, research, or public service. These, after all, are not ends in themselves, but activities which may be pursued alone or combined in various ways to achieve a given institutional mission. An institution devoted to scholarship in the biological sciences has little reason to pursue public-service activities, and might well decide not to engage in teaching. Another institution devoted to urban affairs might effectively combine basic and applied research with teaching, the education of the disadvantaged, and an extensive program of community service. What it should not have is a graduate department of physiology.

Similarly, the separate divisions of higher education into chronological layers—lower division, upper division, graduate, performed by separate

classes of institutions, should not be viewed as separate institutional missions, for all remain general-purpose organizations. Rather, layering is essentially an administrative convenience which places constraints on the kinds of missions which institutions may select.

The selection of an institution's basic educational mission must come from within—and be permitted, and encouraged, from without. The fiscal squeeze of the past few years has at least had some beneficial effects: in the process of retrenchment, institutions have been forced to focus on those areas they want to preserve and expand. (At least one major university is considering entering into informal agreements with other universities about dividing responsibilities for the development of certain fields, and swapping departments in order to strengthen areas of excellence.) But encouragement must come in other ways and from many parties—governments and foundations, especially. It can come in the form of *not* imposing new responsibilities on educational institutions, as well as assisting them to develop excellence in particular endeavors.

New Institutions for Special Missions

There are limits to the extent to which existing, general-purpose colleges and universities can devote themselves to the missions which must be performed in American education. We therefore believe that foundations and public authorities must assist in the founding of new, special-purpose institutions.

There are a number of educational missions which society now requires. Throughout this report, examples are suggested. In addition, two stand out as needing the particular focus which new institutions can bring: professional training and scholarly research.

1. *Professional training.* The rigid and uniform structure of higher education has prevented the dynamic development and adaptation of training for the professions. For an increasing number of professions, a student must complete 4 years of liberal arts education in order to enter a professional school such as law, medicine, or social work. Once in, he must pursue courses of study which are often unrelated to the practical requirements of his profession, and that frequently make him *less* interested in the people whom his profession serves. This long academic road often fails to engage students in their work, or to show them the relevance of their studies to their career aspirations.

We therefore recommend the creation of professional institutes devoted to human service, which will serve two broad goals: to begin professional training during the 1st year of college; and to reflect a new emphasis on training for human service. These innovations will require a number of new operating policies affecting the content and structure of the curriculums,

the role of the faculty, and present methods of evaluation and certification. Most significantly, their success will depend on genuine integration of theory and practice which can best be achieved by work-study arrangements.

2. *Scholarly research.* Our country and the rest of the world is enormously dependent upon scholarly research, not only in the physical sciences but, increasingly, in the social sciences and humanities as well. Yet our national research effort takes place in a setting which, for some scholars, is far from desirable. Most researchers want the excitement and variety of exposure to colleagues of many disciplines, or to undergraduates. But not all do. Some fundamental research lends itself poorly to the present multidimensional university.

To improve the quality of research and to diversify higher education, we believe that research universities should be created which would be devoted to the generation of new knowledge and to specialized graduate education. We conceive of these not as research institutes but as genuine universities covering many fields of knowledge. They would not be a replacement for the traditional university but an additional alternative, attractive to some scholars and graduate students, annoyed by the diversions of football teams and campus newspapers, not to others. There is no reason why all scholars must conduct research or graduate training in a common environment.

There should not be a single order of excellence in higher education. We need a variety of institutions, each excellent in its own appointed mission.

Problems in Search of New Directions

The hardest job for any task force is the identification of the key problems. In this report, we have tried to identify and analyze those problems that lie behind the conventional assumptions. If our analyses are correct, there is a compelling need for major changes in the structure of higher education.

As certain problems emerged from the evidence, we began to see how they interlocked with one another. The overreliance on credentials reinforces the academic lockstep, which in turn leads to an isolation of students and faculty. The professionalization of faculty asserts a strong pressure toward the homogenization of institutions, which in turn is reinforced by the growth of bureaucracy.

Many of the problems, once identified, suggested certain changes in direction. These changes will also reinforce one another. Strengthening campus autonomy will help some colleges move toward strong individual missions. Expanding noncollege opportunities will help to break the lockstep, and these opportunities can become a more viable alternative to college if new resources for off-campus education are provided.

In some cases we have proposed a specific program or institution—such as the regional examining university or the professional institute—which we

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believe responds to a set of related problems. In other cases, we have proposed only general directions for change. For example:

> The illegitimacy of cost effectiveness. We have found that institutions under financial pressures often respond only by cutting expenditures in the easiest ways, rather than making choices according to the relative merits of academic programs or the most cost-effective approaches to teaching.

It is apparent that with multimillion-dollar budgets and a growing questioning by the public, higher education can no longer afford the luxury of avoiding consideration of how effectively it uses its resources. How can skill in resource utilization become a factor in the system of academic rewards? The challenging intellectual task of find more effective learning patterns by better utilization of resources must become a legitimate campus concern.

> Graduate education. When the requirements of society have coincided with the interest of faculties, the results have been striking—as in the post-*Sputnik* development of graduate education in the physical sciences. But when these two interests have been less compatible, as in the development of programs to train new types of professionals for the delivery of health care, the results have been disappointing.

What mechanisms can be established that will make graduate education more responsive?

> Overreliance on academic degrees as credentials. As college attendance has become more common, the use of the college degree as a credential has not died out, but has instead escalated, with new demands for advanced degrees and even postdoctoral study. While credentials serve a useful role, the present overemphasis is distorting the college experience.

How can students be freed from the infatuation of American society with the form rather than the substance of learning?

The main value of suggestions from any task force is the debate they stimulate. If these problems can be accepted as legitimate subjects of concern, then we believe society will find the talent and energy to produce solutions.

The time is critical for change. The present mood of uncertainty presents opportunities not likely to occur again for many years. Higher education is still more flexible than secondary and elementary education. But the adaptability of higher education will not last forever.

FOOTNOTES

1. The Paradox of Access

1. *Digest of Educational Statistics 1970*, U.S. Department of Health, Education and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1970, p. 49.
2. "School Enrollment: October 1969," *Current Population Reports*, U.S. Bureau of the Census, series P–20, no. 206 (October 5, 1970), table 1; *Digest of Educacational Statistics, op. cit.*, p. 67; *Projections of Educational Statistics to 1977–78*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1969; Joseph Froomkin, *Aspirations, Enrollments and Resources*, U.S. Department of Health, Education, and Welfare, Office of Education, Office of Program Planning and Evaluation, Washington, 1970, p. 28.
3. *Digest of Educational Statistics, op. cit.*, table 102; *Opening Fall Enrollment in Higher Education 1969*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1970, table 4; "Enrollment by Highly Selective Private Universities, Fall 1969," *Higher Education General Information Survey*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington.
4. *Digest of Educational Statistics, op. cit.*
5. *The Statistical Abstract of the United States, 1970*, 91st Annual Edition, U.S. Bureau of the Census, p. 104, table no. 147.
6. See, for example, the reports of the Carnegie Commission on Higher Education, Berkeley: *Quality and Equality: New Levels of Federal Responsibility for Higher Education—A Special Report and Recommendations by the Commission, December 1968; Quality and Equality: Revised Recommendations— A Supplement to the 1968 Special Report by the Commission*, June 1970; *A Chance to Learn: An Action Agenda for Equal Opportunity in Higher Education—A Special Report and Recommendations by the Commission*, March 1970, all published by McGraw-Hill, New York; also *Priorities in Higher Education, The Report of the President's Task Force on Higher Education* (Hester Commission), August 1970, U.S. Government Printing Office, Washington, D.C.; *The Federal Financing of Higher Education*, Association of American Universities, Washington, D.C., 1968; *The Federal Investment in Higher Education: Needed Next Steps*, American Council on Education, Washington, D.C. 1969; *The Federal Government and Higher Education*, Report of the Advisory Committee on Higher Education to the Secretary of Health, Education, and Welfare, Washington, D.C., 1968.
7. These are approximations derived in and from several different sources: Robert H. Berls, "Higher Education Opportunity and Achievement in the United States," *The Economics and Financing of Higher Education in the United States*, A

Compendium of Papers Submitted to the Joint Economic Committee of the Congress, 91st Congress, 1st Session, U.S. Government Printing Office, 1969; *Digest of Educational Statistics, op. cit.;* A. W. Astin, "Undergraduate Achievement and Institutional Excellence," *Science,* August 16, 1968, pp. 661–668; *Admission and Retention of Students,* Master Plan Phase III, Board of Higher Education, Springfield, Ill., 1969; James Trent and Leland Medsker, *Beyond High School,* San Francisco, 1968; *Phase I Final Report and Phase II Final Report,* Northern California Cooperative Research Project on Student Withdrawals (Norcal Project), 1969 and 1970, Thomas F. MacMillan, Project Director, Napa, Calif.; Bruce K. Ecklund, "College Dropouts Who Came Back," *Harvard Educational Review,* 1964, pp. 402–20; A. W. Astin and R. J. Panos, "Attrition Among College Students," *American Educational Research Journal,* January 1968, pp. 57–72; and data collected from a number of individual colleges. A nationwide profile of school attainment among a complete age cohort can be derived from "Educational Attainment, March 1970," *Current Population Reports,* U.S. Bureau of the Census, Series P-20, No. 207. The list of the 15 most selective institutions was derived from the American Council on Education Study, *An Assessment of Quality In Graduate Education,* prepared by Allan M. Cartter in 1966, as well as the most recent ACE study published in December of 1970. Even though these studies rated graduate education only, the presumption is that high standards of selectivity for undergraduate students would obtain as well.

The large State universities referred to are those whose single campuses, regardless of whether they were part of a State system, had 15,000 or more full-time enrolled students in the fall of 1969. These were obtained from table 4, *HEGIS Report IV 2.3,* U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1969.

8. Norman Pearlstine, "The University of Texas Works Hard to Improve, Yet the Past Lingers," *Wall Street Journal,* January 20, 1969.
9. *Five Years Later,* Division of Institutional Research, Office of the Chancellor, California State Colleges, Los Angeles, April 1970, pp. 13–14, and discussions with the Office of the Chancellor.
10. Academic failure is not the most common reason for "dropping out" of college. Alexander Astin and Robert Panos ("Attrition Among College Students," *American Educational Research Journal,* January 1968, p. 63) found that, for men, the major reasons for leaving were changing plans, dissatisfaction with college, finances, wanting time to reconsider interests and goals, and academic failure, in that order. For women, the five most important reasons for leaving college were marriage, dissatisfaction with the college environment, changing career plans, finances, and reconsideration of interests and goals, in that order of importance. Academic failure was eighth among major reasons for women to leave college. Dropping out is more a function of a poor fit between the nature of present institutions and the expectations and goals of present-day students. Other commonly cited reasons for students' dropping out, other than academic failure, are lack of interest in their studies, feelings of loneliness and isolation (at large institutions), becoming tired of being a student, and desire to travel or interrupt education.

    Some people return to college after a period of absence, working, traveling, and reassessing their goals. Measurements of students "dropping back in" are difficult to obtain. Some students drop in and out several times. Some return

after a short absence, some after a long absence. Some finish after returning, some do not. Many students, after leaving one institution, will enter another institution. There is no precise way to measure these ebbs and flows of the student attendance.

Measuring college dropouts is therefore difficult to do with any accuracy, especially when a variety of things is meant by the term "drop out." Another reason for the inaccuracy of the measurement is that students who leave college may be less than frank about the real reasons that caused them to leave. That is, perceived social pressure, peer-group consciousness, or personal reasons may affect the reporting of reasons for leaving, which will in turn lead to inaccurate tallies on reasons for failure to complete a college course in the standard 4-year term at one school.

The following bear on the problem of explaining dropout rates: Berls, *op. cit.;* Carnegie Commission on Higher Education, *Less Time, More Options,* Berkeley, December 1970; Amitai Etzioni and Murray Milner, *Higher Education in An Active Society,* Bureau of Social Science Research, Washington, 1970; *Admission and Retention of Students,* Master Plan, Phase III, Committee B, Illinois Board of Higher Education, Chicago, 1969.

11. The College for Human Services in New York City and Northeastern University in Boston are two excellent examples of this point.

2. The Lockstep

1. Recent changes in draft procedures have diminished this pressure at the graduate level. For undergraduates with high lottery numbers, the uncertainty of the draft is now reduced, but the undergraduates with low numbers are compelled more than ever to continue their studies full time, whether they think them important or not.
2. See Ann M. Heiss, "Today's Graduate Student—Tomorrow's Faculty Member," *The Research Reporter,* 1969, Berkeley.
3. Even when summer jobs take students away from the campus, they seldom provide exposure to potential occupations for the student. Very low percentages of Stanford students, for example, hold semiprofessional summer jobs. See Joseph Katz, Harold Korn, Carole Leland, and Max Levin, *Class, Character and Career,* Stanford, 1969, p. 135.
4. The various factors underlying the lack of career orientation among college students and the resulting difficulty in making career choices are described in Joseph Katz and Associates, *No Time for Youth,* Jossey-Bass, San Francisco, 1968.
5. This is naturally difficult to document, but we draw this conclusion from conversations with faculty and administrators at a variety of universities. It may also be legitimate to read such indecision into the statistics on students who enter graduate school in doctoral programs, but fail to reach the Ph. D. for other than scholastic or financial reasons. Attrition rates for such a group are given in Joseph Mooney, *Attrition Among Ph. D. Candidates,* Princeton, 1967.
6. A phenomenon described recently in the *Wall Street Journal* suggests that some highly educated youth are not only "gliding past" careers, but rejecting them as well. Recent graduates of major universities who had dropped out of graduate school (or in some cases, a regular job) came to the San Francisco Bay Area and took jobs as postal clerks, janitors, and taxi drivers ("College-Trained Youth

Shun the Professions for a Free-Form Life," June 24, 1970). This might well be explained in terms of the "counter culture" trends referred to before.

7. *Those Who Made It*, Division of Institutional Research, Office of the Chancellor, California State Colleges, Los Angeles, January 1969, p. 11.
8. Both the enrolled and only occasionally enrolled drifters are becoming a campus-connected phenomenon. See, for example, "New Campus Problem: Young Drifters," *New York Times*, November 20, 1970, p. 1.
9. Nevitt Sanford, *Where Colleges Fail*, Jossey-Bass, San Francisco, 1967.
10. See "Absenteeism in Employees," *Fortune*, July 1970.
11. Joseph D. Mooney, *op. cit.*

3. Educational Apartheid

1. E.g., a study of returned GI students by Everard Nicholson, *Success and Admission Criteria for Potentially Successful Risks*, Brown University, Providence, R.I., 1970.
2. Stephen H. Spurr, *Academic Degree Structures*, McGraw-Hill, 1970, p. 127.
3. *Opening Fall Enrollment in Higher Education 1969*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, D.C. 1970, p. 9.
4. In the fall of 1969, enrollments "in college" by age group were as follows: 18 and 19 years, 39 percent; 20 and 21 years, 32.6 percent; 22–24 years, 14.8 percent; 25–29 years, 7.1 percent; 30–34 years, 4.0 percent. "School Enrollment: October 1969," *Current Population Reports*, U.S. Bureau of the Census, table 1, series P–20, no. 206, 1970.
5. *Opening Fall Enrollment in Higher Education 1969*, Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, D.C. 1969, p. 9.
6. The University of Florida, Southern Methodist University, Stanford, and Colorado State University have such systems in certain disciplines on a limited basis.
7. The innovations of St. Petersburg Junior College are reported in *U.S. News and World Report*, August 17, 1970, pp. 46–47.

4. The Homogenization of Higher Education

1. The rise of "special interest" colleges is described in Christopher Jencks and David Riesman, *The Academic Revolution*, Garden City, N.Y., 1969, pp. 1–8.
2. The number of private, sectarian colleges has actually continued to grow, but their impact declines because of their small size.

	Private, sectarian	All colleges
1950	710	1,857
1955	723	1,855
1960	850	2,028
1966	910	2,252

Source: Harold L. Hodgkinson, *Institutions in Transition*, Carnegie Commission, Berkeley, 1970.

3. While the number of coeducational institutions grew rapidly from 1950 to 1966, the number of single-sex colleges remained almost constant.

	Male	Female	Coed
1950	277	266	1, 364
1960	236	259	1, 533
1966	232	283	1, 737

Source: Hodgkinson, *op. cit.*, p. 24. But the trend away from the single-sex institution began in earnest only about 1965. Since then, prestigious institutions such as Yale, Dartmouth, Princeton, and Vassar have gone coed. For many colleges, this step is becoming necessary to recruit enough students. See "Small Colleges Encounter Shortage of Students," *Chronicle of Higher Education*, August 31, 1970.

4. Jencks and Riesman, *op. cit.*, pp. 264–65.
5. The widespread trend toward institutional homogeneity is well documented by Hodgkinson, *op. cit.* The pressures in this direction are evident in three case studies by E. Alden Dunham, *Colleges of the Forgotten Americans*, McGraw-Hill, New York, 1969.
6. Eleanor P. Godfred, *A Study of Community Colleges and Vocational Training Centers*, a report to the Office of Education, prepared under contract by the Bureau of Social Science Research, Washington, 1970. This figure is also cited by the Carnegie Commission Report, *The Open Door Colleges*, Berkeley, 1970, p. 18.
7. *Projections of Educational Statistics to 1977–78*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1969, p. 16.
8. Jencks and Riesman, *op. cit.*, pp. 25–26.
9. *Digest of Educational Statistics 1970*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1970, p. 85. We recognize the difference between attending a campus of 10,000 as opposed to a campus of 40,000 students, but the difference is less than that between attending a campus of 10,000 and one of 500 students. Hodgkinson, *op. cit.*, would seem to have a meaningful classification. He defines institutions as "small" if under 1,000 students (520 institutions); large, 5,000 to 15,000 (128 institutions); giant, 15,000 to 25,000 (31 institutions); super, 25,000 and over (9 institutions).
10. *The Open Door Colleges, op. cit.*

5. The Professionalization of Learning

1. See Christopher Jencks and David Riesman, *The Academic Revolution*, Garden City, New York, 1967. Many of our points are based on, or run parallel to, the observations made in this superb study.
2. See works by James D. Koerner and William Selden.
3. A 1963 survey of teaching faculty in universities and 4-year colleges found that 38 percent of the nondoctorates were working toward an advanced degree. See Ralph E. Dunham, Patricia S. Wright, and Marjorie O. Chandler, *Teach-*

ing Faculty in Universities and Four-Year Colleges, Spring, 1963, U.S. Department of Health, Education, and Welfare, Office of Education.

4. Alan E. Bayer, "College and University Faculty: A Statistical Description," Office of Research, American Council on Education, vol. 5, no. 5, 1970.
5. For three excellent case studies, see E. Alden Dunham, *Colleges of the Forgotten Americans*, McGraw-Hill, New York, 1969. Also, *The Changing Four-Year College*, Southern Regional Education Board, Atlanta, Ga. 1970; Fred F. Harder, H. Bradley Sagen, and C. Theodore Molen, Jr. *The Developing State Colleges and Universities*, The American College Testing Program, Iowa City, 1969.
6. See Riesman and Jencks, *op. cit.*
7. The implications of such alienation are developed in an unpublished paper by F. Champion Ward, "Knowing, Acting, and Working: A Note on the College Curriculum." Mr. Ward is with the Ford Foundation.
8. See particularly Chapter II, "The Causes of Student Protest," in *The Report of the President's Commission on Campus Unrest* (The Scranton Commission), Washington, 1970.
9. An example of this trend is a statement issued by Charles Hitch, President of the University of California, on the improvement of undergraduate teaching and the use of instructional resources. "There must be the opportunity for every freshman to participate, during at least one quarter of the academic year, in a small-group class directly taught by a faculty member in one of the professorial ranks." From "President Hitch: Statement on Improvement of Undergraduate Teaching." *University Bulletin*, vol. 19, no. 11, November 9, 1970, p. 57.
10. Several studies have pointed out that the developing interest in problems of social policy may lead to a convergence of teaching, research, and service. See Elliot R. Morss, "The Faculty Failure in Higher Education: Causes, Results, and What Should Be Done About It", unpublished paper, the Urban Institute, Washington. Also, Erick Jantsch, *Integrative Planning for the "Joint Systems" of Society and Technology—the Emerging Role of the University*, Massachusetts Institute of Technology, Cambridge, May 1969.

6. The Growth of Bureaucracy

1. Two studies, 10 years apart, indicate the trend: S. V. Martorana and Ernest V. Hollis, *State Boards Responsible for Higher Education*, U.S. Department of Health, Education, and Welfare, Office of Education, Washington, 1960; Eugene C. Lee and Frank M. Bowan, *The Governance of the Multi-campus University*, to be published by McGraw-Hill.
2. *Advance Report on Opening Fall Enrollment in Higher Education, 1970, Institutional Data*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Health Statistics, Washington, 1970.
3. A number of educators have proposed small residential "cluster" colleges as a logical, tested response to problems of size, bureaucracy, and lack of diversity within universities, among them Clark Kerr as President of the University of California, Samuel Gould as Chancellor of the State University of New York, and Roger Heyns at both the University of Michigan and the University of California. On the cluster college concept see Jerry G. Gaff, editor, *The Cluster*

College, Jossey-Bass, San Francisco, 1970; Warren Martin, *Alternative to Irrelevance: A Strategy for Reform in Higher Education,* Abingdon Press, Nashville, 1968; "Innovative and Experimental Colleges," *Encyclopedia of Education* (in press), Macmillan, New York; Joseph Axelrod, Mervin Freedman, Winslow Hatch, Joseph Katz, Nevitt Stanford, *Search for Relevance: The Campus in Crisis,* Jossey-Bass, San Francisco, 1969; Paul Dressel, editor, *Evaluating Residential Colleges* (tentative title), for late 1971, Office of Institutional Research, Michigan State University, East Lansing; and Jerry G. Gaff, "Cluster Colleges As A Response," *The Research Reporter,* vol. V, no. 4, 1970, pp. 6–7.

On the frequently cited relationship between campus size and student protest, see Joseph Scott and Mohamed El-Assal, "Multiversity, University Size, University Quality and Student Protest: An Empirical Study," *American Sociological Review,* October, 1969.

4. Examples of recommendations for extensive coordination of public and private institutions are to be found in *Strengthening Private Education in Illinois: A Report on the State's Role,* Illinois Board of Higher Education, March 1969, and in *New York State and Private Higher Education: Report of the Select Committee on the Future of Private and Independent Higher Education,* January 1968. Problems resulting from such coordination are discussed in Lee and Bowen, *op. cit.*
5. John A. Crowl, "Some Public Colleges Face 'Austerity Operations' Despite $7 Billion in State Funds," *The Chronicle of Higher Education,* October 12, 1970.
6. Information from the Office of the Chancellor, California State Colleges, Los Angeles.
7. The detail and scope of such rules are in some cases astounding. For example, in the summer of 1970, President Hitch of the University of California laid down specifications for campus rules on the conduct of courses that went into such details as providing advance notice of the subject matter of each lecture and arranging for makeup sessions when regular course meetings are cancelled because of illness. The occasion for issuing these specifications was pressure to "reconstitute" courses in the aftermath of the Cambodian invasion, which only makes it the more striking that the instructions read like a personnel manual.
8. This trend is described in "Rise in Collective Bargaining," *Chronicle of Higher Education,* May 25, 1970. The effects of faculty unions are not yet generally apparent, but clearly the unionization of elementary and secondary school teachers has impeded change at those levels. A report on faculty unionization at the City College of New York finds that innovation has not been inhibited. "Collective Bargaining with the Faculty," *Educational Digest,* September 1970.
9. The nonrenewal of Herbert Marcuse's contract at the University of California, San Diego, and the Larry Caroline Case at the University of Texas are well-known examples. The vulnerability of a centralized administration to local incidents can lead to still more centralization. President Charles Hitch of the University of California stated recently, "I have to get involved with every major cause because the regents are going to get involved. They have taken a very active role in problems they used to stay out of, like student press, appointment and promotion of faculty, and restructuring and grading." *Newsweek,* August 31, 1970, p. 70.
10. All college presidents probably see their authority diminishing, but in a large system there are additional competitors for power. Responses to questionnaires distributed by Harold Hodgkinson indicate a decrease in authority of the campus

administration on campuses which are part of multicampus institutions (*Institutions in Transition,* McGraw-Hill, 1970, p. 58). Further evidence of this is offered by Professor Joseph Katz, in a study not yet published.

Especially dangerous may be a loss of campus authority to negotiate with students. A survey by the American Association of Universities showed that private institutions were able to give careful consideration to student demands for a fall recess to permit participation in the 1970 congressional campaign, but campus executives within State systems denied their authority to make such decisions.

11. There have been an increasing number of questions about economies of scale in higher education. See Seymour E. Harris, "Financing Higher Education: An Overview," and Ferdinand K. Levy, "Sources of Economies of Scale in Universities," both in *The Economics and Financing of Higher Education in the United States,* a compedium of papers submitted to the Joint Economic Committee of the Congress of the United States, 91st Congress, 1st Session, 1969.

7. The Illegitimacy of Cost Effectiveness

1. Dwight R. Ladd, *Change in Educational Policy,* McGraw-Hill, 1970. We are aware of two instances in which cost differentials were raised as an issue in these studies but then set aside as inappropriate to the question of educational reform.
2. To paraphrase Peter Drucker.
3. The need for cost-effectiveness analysis as part of the university's accountability is explored by F. E. Balderston in "Thinking about the Outputs of Higher Education," *The Outputs of Higher Education,* Western Interstate Commission for Higher Education, Boulder, 1970. Compare the statement of the sponsors of this seminar report:

   Understandably resistant to pressures from within and without, institutions of higher education are nevertheless coming to an understanding that it is far wiser to be part of the process which suggests forms of measurement and identifies the areas of measurement. The WICHE MIS program is built on that belief. *Ibid.,* p. 4.
4. See the discussions of weighting in the Introduction and the paper "The Outputs of Higher Education: Their Proxies, Measurement, and Evaluation," by John Vaizey in *The Outposts of Higher Education, ibid.*
5. Data were supplied in confidence by five universities and colleges.
6. The whole problem of incentives and practical politics is discussed by Alain C. Enthoven in "Measures of the Outputs of Higher Education: Some Practical Suggestions for Their Development and Use" in *The Outputs of Higher Education, op. cit.* The sheer size of the differences in cost that are discovered is part of the stimulus. At George Washington University in Washington, D.C., costs per credit hour in 1969–70 ranged from $12.32 in anthropology to $83.11 for chemistry.
7. Peter Schrag, "Miami-Dade's Encounter with Technology," *Change,* March–April 1969.

8. The Inner Direction of Graduate Education

1. *A Fact Book on Higher Education,* American Council on Education, Washington, 1969, p. 9214.

2. *National Patterns of R & D Resources 1953–70,* National Science Foundation, Washington, 1969, pp. 26–27.
3. Federal obligations for university-based research declined from $786 million in 1968 to $723 million in 1970 in current dollars. The impact of this reduction was dramatic because of inflation and a previous pattern of constant increases. *Federal Funds for Research Development and Other Scientific Activities, Fiscal Years 1969, 1970, 1971,* National Science Foundation, Washington, 1970, p. 10. The most striking and pervasive reduction in graduate student support has been in the National Defense Graduate Fellowship program, where the number of students supported declined from over 12,000 in FY 1969 to 8,600 in FY 1970, and is projected to fall to 4,700 by FY 1972. *The Budget of the United States Governent, Appendix, Fiscal Year 1972,* Executive Office of the President, Office of Management and Budget, Washington, 1971, p. 448.
4. Roughly half again as many bachelor's degrees were awarded in academic year 1967–68 as in 1949–50. In contrast, approximately three times as many master's degrees and four times as many doctorates were awarded in the later year than in the earlier. *A Fact Book on Higher Education, op. cit.,* pp. 9202, 9210 and 9214.
5. See Allan M. Cartter and Robert L. Farrell, "Academic Labor Market Projections and the Draft," in *The Economics and Financing of Higher Education in the United States,* a compendium of papers submitted to the Joint Economic Committee of the Congress of the United States, 91st Congress, 1st Session, 1969.
6. Of the 65, eight had previously granted degrees no higher than the bachelor's, 48 only the master's. Nine were new institutions. In the same period (1956–57 through 1965–66), 16 institutions discontinued doctorate programs and four which had given doctorates merged or went out of existence. *Graduate Education, Parameters for Public Policy,* National Sceince Board, 1969, p. 33.
7. It has been estimated that there were 16,000 postdoctoral appointments by 1967. Two-thirds were post-Ph.D.'s and one-third M.D.'s. Stephen H. Spurr, *Academic Degree Structures,* McGraw-Hill, New York, 1970.
8. *A Fact Book on Higher Education, op. cit.,* p. 9214.
9. These estimates were calculated from data included in *A Fact Book on Higher Education, op. cit.,* and *Digest of Educational Statistics 1970,* U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1970. The estimates assume an average working life of 30 years.
10. By this we mean that some Ph.D.'s who would, a few years ago, have readily found the kinds of employment they expected now have to wait for offers of such positions or accept different kinds of work. National Research Council data (the Doctorate Records File) show the percentage of 1969 doctorates in the arts and humanities seeking appointments without prospects to be twice the percentage of 1964 doctorates at the time of their degrees. The increase is less for the natural sciences, less still for the social sciences and engineering. Fred D. Boercker, Lindsey R. Harmon, and William C. Kelly, "Employment Status of Recent Recipients of the Doctorate," *Science,* May 22, 1970. Given the sharply expanded capacity of graduate schools to train Ph.D.'s and the slowing growth of the "college age" population, major social and educational changes would have to occur for an oversupply *not* to result. This is a quite different basis for judgment than the number of openings of which learned societies have information and the number of applicants for each such positoin. Since the advertisement of openings tends to increase in a "seller's market," and multiple job applications in a "buyer's market," estimates on this basis are misleading.

11. *Careers of Ph.D.'s, Academic vs. Nonacademic, A Second Report on Follow-ups of Doctoral Cohorts, 1935–1960,* National Academy of Sciences, Washington, 1968.
12. Lewis B. Mayhew, *Graduate and Professional Education, 1980,* McGraw-Hill, New York, 1970; Allan M. Cartter, "Graduate Education and Research in the Decades Ahead," in Alvin C. Eurich, editor, *Campus 1980,* Delacort, New York, 1968.
13. Often a commitment to teaching comes later, as a result of experience as a teaching assistant. But a study indicates that two-thirds of graduate students surveyed by questionnaire "decried the faculty's lack of interest in preparing the students" for the responsibilities of teaching. *Progress Report 1965–69,* Center for Research and Development in Higher Education, Berkeley, p. 64.
14. Calculations based on data given in confidence.

9. The Credentials Monopoly

1. James W. Kuhn, "Would Horatio Alger Need a Degree?," *Saturday Review,* December 19, 1970.
2. Ivar Berg, "Rich Man's Qualifications for Poor Man's Jobs," *Trans-Action,* March 1969, p. 46.
3. The 1969 *Manpower Report* of the Secretary of Labor says that even to work in semiskilled trades, "a high school education or prior skill training (or both) is likely to be increasingly necessary as the supply of persons with such preparation becomes larger." Quoted in James W. Kuhn, *op. cit.,* p. 55. Valuable data can be found in the *Occupational Outlook Handbook,* U.S. Department of Labor, Bureau of Labor Statistics, Bulletin no. 1650, 1970–71; and *College Educated Workers, 1968–80: A Study of Supply and Demand,* U.S. Department of Labor, Bureau of Labor Statistics, Bulletin no. 1676, 1970.
4. Ivar Berg, *op. cit.,* p. 48.
5. Ivar Berg, *Education and Jobs: The Great Training Robbery,* Praeger, New York, 1970.
6. Donald P. Hoyt, *The Relationship Between College Grades and Adult Achievement. A Review of the Literature,* American College Testing Service Research Reports, no. 7, Fall 1965. This study has been criticized, but we found nothing much to replace it. In a study conducted for the Carnegie Commission, Spaeth and Greeley found that grades have a substantial impact on the prestige of the occupation held by a man 7 years after graduation. However, this impact probably derives from the importance of grades in getting rather than performing a job. The authors also found that as later variables were added to the model, the direct effect of grades diminished. See Joe L. Spaeth and Andrew M. Greeley, *Recent Alumni and Higher Education,* McGraw-Hill, New York, 1970, p. 167.
7. Gordon L. Marshall, "Predicting Executive Achievement," unpublished doctoral thesis, Harvard Graduate School of Business Administration, June 1964. Quoted in Sterling Livingston, "Myth of the Well-Educated Manager," *Harvard Business Review,* January-February 1971, p. 80.
8. Lewis B. Ward, *Analysis of 1969 Alumni Questionnaire Returns,* unpublished report to the faculty, Harvard Graduate School of Business Administration, 1970. Quoted in Sterling Livingston, *op. cit.,* p. 80.
9. Some limited progress is being made because the critical needs for health manpower have created so much pressure for change. See "New Members of the

Physician's Health Team, Physicians' Assistants," 1970, *Report of the Ad Hoc Panel on New Members of the Physician's Health Team of the Board on Medicine of the National Academy of Sciences,* and *Selected Training Programs for Physician Support Personnel,* U.S. Department of Health, Education, and Welfare, Bureau of Health Professions, Education, and Manpower Training, June 1970.

10. See "Occupational Licensing and the Supply of the Nonprofessional Worker," *Manpower Research Monograph No. 11,* U.S. Department of Labor, Washington, D.C.
11. See Stephen Spurr, *Academic Degree Structures: Innovative Approaches,* general report to the Carnegie Commission, 1970.
12. Burton R. Clark, "The 'Cooling Out' Function in Higher Education," *American Journal of Sociology,* May 1960.
13. For some useful analyses and recommended solutions, see Amitai Etzioni and Murray Milner, *Higher Education in An Active Society: A Policy Study.* Bureau of Social Science Research, Washington, 1970, pp. I–154 to I–179; David Hapgood, "Degrees: The Case for Abolition," *The Washington Monthly,* August 1969, pp. 6–13; and S. M. Miller and Marsha Kroll, "Strategies for Reducing Credentialism," *Action for Change in Public Service Careers,* Summer 1970, pp. 10–13.

10. The Unfinished Experiment in Minority Education

1. Some excellent studies which have been done include: John Egerton, *State Universities and Black Americans: An Inquiry Into Desegregation and Equity for Negroes in 100 Public Universities,* distributed by the Southern Education Foundation, Atlanta, Ga., May 1969; a 1970 study entitled "Minority Student Access to Higher Education," not yet ready for publication, sponsored by the Ford Foundation; Alan E. Bayer and Robert F. Boruch, *The Black Student in American Colleges,* ACE Research Reports, vol. 4, no. 2, 1969, Office of Research, American Council on Education; Carnegie Commission on Higher Education, *A Chance to Learn, An Action Agenda for Equal Opportunity in Higher Education,* March 1970; Robert L. Green, "Minority Group Students at Predominantly White Universities," *The Education Journal,* Fall 1970; and Earl J. McGrath, *The Predominantly Negro Colleges and Universities in Transition,* published for the Institute of Higher Education by the Bureau of Publications, Teachers College, Columbia University, 1968.
2. Only at some urban junior colleges (precisely those institutions which are considered appropriate for disadvantaged students) does the percentage of black student enrollment exceed 10 percent. In 1969, only five predominantly white institutions with membership in the National Association of State Universities and Land Grant Colleges reported undergraduate black enrollment in excess of 5 percent. (*For Your Information,* Office of Institutional Research, NASULGC, April 1970, Washington, D.C.)
3. Representative arguments against minority admission practices in this regard are given by Spiro T. Agnew in a speech on April 13, 1970, entitled "Toward a 'Middle Way' in College Admissions," reprinted in *Educational Record,* Spring 1970, pp. 106–111. For counter arguments, see "Responses to Spiro T. Agnew on Admissions," *College Board Review,* Summer 1970, and "Admissions Officers Say Agnew May 'Misunderstand' the Process," *Chronicle of Higher Education,* March 23, 1970.

4. Memorandum of Dr. Moynihan to President Nixon, reprinted in the *Wall Street Journal*, March 3, 1970.
5. *Current Population Reports*, U.S. Bureau of the Census, Series P–20, nos. 162, 183, 190, and 206, Washington, various years to 1970. These data are based on a national sample survey of individuals who are asked if they are enrolled in *any* college, full or part time. They are not comparable to U.S. Office of Education data, which are based on surveys of accredited institutions only. The Office of Education reported a black enrollment of 4.32 percent in 1965. See Egerton, *op. cit.*, p. 9. The U.S. Department of Health, Education, and Welfare reported a black percentage of 6 in 1968 (Office of Civil Rights, *Undergraduate Enrollment by Ethnic Groups in Federally Funded Institutions of Higher Education, Continental U.S.A., Fall 1968*), while the Ford Foundation estimated 5.9 percent for fall 1970. For data on the educational attainment of blacks, see "Educational Attainment, March 1970," *Current Population Reports*, Bureau of the Census, Series P–20, no. 207.
6. *Educational Attainment by Age, Race, and Sex*, U.S. Bureau of the Census, 1969. The Ford Foundation study (*op. cit.*) discusses sources of different total black enrollment figures. The Department of Health, Education, and Welfare Office of Civil Rights (*op. cit.*) gives a figure of 287,053, with the black proportion of total enrollment as 6 percent. The Ford study cites 5.9 percent for fall 1970. The census data are for fall 1969.
7. For analysis of data on this point to 1968 see Alan E. Bayer and Robert J. Boruch, *The Black Student in American Colleges*, American Council on Education Research Report, vol. 4, 1968. The U.S. Office of Education's Federal Interagency Committee on Education, using institutional data from the National Center for Educational Statistics, reported a fall 1970 enrollment at 106 traditionally black institutions of 179,200, compared to 162,500 in 1968 and 170,500 in 1969. Of these, about 5 percent are white students.

   But even using the most conservative data on black enrollments overall, the percentage in traditionally black institutions would seem to be less than 50 and falling. The Ford Foundation gives a figure of 32.8 percent for 1969. The Bureau of the Census in its *Current Population Reports*, Series P–23, no. 29, found that the percentage of blacks enrolled who were in predominanlty black institutions fell from 51 in 1964 to 36 in 1968.
8. About 5 percent per year from 1968 to 1970. Federal Interagency Committee, *op. cit.*
9. Egerton, *op. cit.*, pp. 13, 14, 17, 19, 20, and unpublished data from the National Association of State Universities and Land Grant Colleges. The American Council on Education national sample survey of freshmen reported 6 percent black freshmen in 1969 and 9 percent in 1970. This large jump seems largely due to an increase from 4.1 to 16.9 percent in the percentage of freshmen at public 2-year colleges who are black, and this largely in the south and west. See *National Norms for Entering College Freshmen, Fall, 1969* and *Fall, 1970*, American Council on Education, Office of Research, Research Reports, vol. 4, no. 7 and vol. 5, no. 6, *passim*. Preliminary data from the Bureau of the Census *Current Population Survey* lend tentative corroboration to these findings.
10. *Ibid.*
11. Amitai Etzioni and Murray Milner, *Higher Education in an Active Society: A Policy Study*, Bureau of Social Science Research, Washington, D.C. March 1970, pp. III–B–57, 58. Their source of data is Bayer and Boruch, *op. cit.*

12. In assessing black student academic achievement, we have relied on data summaries from a variety of sources, including: A. W. Astin, *Racial Considerations in Admissions, The Campus and the Racial Crisis.* American Council on Education, 1969, p. 65; Harry Kitano and Dorothy Miller, *An Assessment of Educational Opportunity Programs in California Higher Education,* Scientific Analysis Corporation, San Francisco, 1970, p. 57.
13. The predictive validity of high school grade-point averages and SAT scores for minority students is much debated. But most studies conclude that these indices are as accurate for minorities as for other students in the prediction of college scholastic achievement. A review of the literature on this subject is given by S. A. Kendrick and Charles L. Thomas in *Transition From School to College, The Study of Collegiate Compensatory Programs for Minority Group Youth,* Columbia University, 1970, pp. 161–63.
14. Mothershead, *Special Program Task Force Report and Evolution, April 1968–June 1970,* Stanford University, Stanford, Calif., 1970, pp. 22–23; and Robert L. Green, *The Admission of Minority Students,* a report presented to The Presidential Commission on Admissions and Student Body Composition, Michigan State University, October 22, 1970, pp. 8–9.
15. Everard Nicholson, *Success and Admission Criteria for Potentially Successful Risks,* Brown University, Providence, R.I., 1970, p. 25.
16. See Mothershead, *op. cit.,* and Green, *op. cit.*
17. Robert L. Green, "The Black Quest for Higher Education: An Admissions Dilemma," *Personnel and Guidance Journal,* vol. 47, no. 9 (May 1969), p. 909; "For Tomorrow's Students, Multiple Choices," *Fortune,* November 1970, p. 147 ff.
18. Interview with Venis Marsh, Director, City University of New York SEEK Program.
19. A. J. Jaffe and Walter Adams, Bureau of Applied Social Research, Columbia University, "Academic and Socio-Economic Factors Related to Entrance and Retention at Two- and Four-Year Colleges in the Late 1960's," paper presented to the American Statistical Association, December 1970, Detroit.
20. Cited by Etzioni and Milner, *op. cit.,* p. III–B–56, who draw upon the work of Bayer and Boruch, *op. cit.,* p. 42.

11. Barriers to Women

1. *Report of the Commission on Tests,* College Entrance Examination Board, vol. I, "Righting the Balance," New York, 1970, *passim.* See also John A. Creager, et al., *National Norms for Entering College Freshmen, Fall 1969,* American Council on Education, Washington, 1969, p. 51.
2. *Digest of Educational Statistics 1970,* U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1970, p. 89. In the Project Talent national sample survey of 1960 high school graduates, 54 percent of the men and 37 percent of the women enrolled in postsecondary education at some time between 1960 and 1966. Computed from Project Talent data published in Joseph Froomkin, *Aspirations, Enrollments, and Resources,* U.S. Department of Health, Education, and Welfare, Office of Education, Office of Program Planning and Evaluation, Washington, 1970, p. 28.

   Data on male vs. female rates of degree attainment through 1968 are given in *Trends in Educational Attainment of Women,* U.S. Department of Labor, 1969,

p. 16. Slightly more women than men graduate from high school (50.4 percent and 49.6 percent, respectively). But the percentage of women among college freshmen is approximately equivalent to the percentage earning bachelor's and first professional degrees (41.5 percent), for rates of attrition are about equal for both sexes (Lewis J. Perl and Martin T. Kutzman, *Student Flows in California's System of Higher Education,* Office of the Vice President, University of California, 1970, chap. 3, tables 1–5; Robert G. Cope, "Limitations of Attrition Rates," *Journal of College Student Personnel,* November, 1968, p. 386).

3. *Trends in Educational Attainment of Women, op. cit.,* p. 16.
4. *1969 Handbook on Women Workers,* U.S. Department of Labor, Women's Bureau Bulletin no. 294, pp. 193–94; *Digest of Educational Statistics, op. cit.,* tables 93 and 117.
5. This figure was calculated from data in *A Fact Book on Higher Education,* American Council on Education, Washington, 1969.
6. *1969 Handbook on Women Workers, op. cit.,* p. 181.
7. *Trends in Educational Attainment of Women, op. cit.,* pp. 8–10 and 16; *1969 Handbook on Women Workers, op. cit.,* pp. 191–92.
8. *Report of the Committee on Senate Policy,* Academic Senate, University of California, Berkeley Division, Berkeley, 1970, p. 73.
9. *Aspirations, Enrollments, and Resources, op. cit., p.* 123, and unpublished data, U.S. Department of Health, Education, and Welfare, Office of Education, Office of Program Planning and Evaluation.
10. *1969 Handbook on Women Workers, op. cit.,* p. 190; and *Trends in Educational Attainment of Women, op. cit.,* p. 16. The fact that women earn a higher percentage of master's and first professional degrees than their percentage of graduate and professional enrollments is largely due to the fact that a master's degree is a major objective of many women, particularly as a teaching credential, while men more commonly by-pass the master's degree. In general, the role of women in elementary and secondary school teaching, and their pursuit of credentials in this one area, must always be born in mind in interpreting aggregate data on the educational attainment of women.
11. *1969 Handbook on Women Workers, op. cit.,* p. 3.
12. *Ibid.,* p. 205.
13. Helen S. Astin, *The Woman Doctorate in America,* Russell Sage Foundation, New York, 1969, p. 57.
14. *1969 Handbook on Women Workers, op. cit.,* p. 209.
15. Rita Simon, et al., "The Woman Ph.D.: A Recent Profile," *Social Problems,* vol. 15, no. 2, Fall 1967, pp. 221–35.
16. *1969 Handbook on Women Workers, op. cit.,* p. 161.
17. *Careers of Ph.D.'s, Academic vs. Nonacademic, A Second Report on Follow-ups of Doctoral Cohorts, 1935–60,* National Academy of Sciences, Washington, 1968.
18. Frank S. Endicott (*Trends in Employment of College and University Graduates,* Northwestern University, 1970, p. 5) provides the following data:

Expected salaries for June 1970 college graduates by sex and selected field

Field	Average monthly salary	
	Women	Men
Accounting	$746	$832
Chemistry	765	806
Economics, finance	700	718
Engineering	844	872
Liberal arts	631	688
Mathematics	746	773

19. *Salaries in Higher Education 1965-66,* National Education Association Research Report 1966 R–2, February 1966, pp. 3–4.
20. *Trends in Educational Attainment of Women, op. cit.,* p. 16; *Digest of Educational Statistics, op. cit.,* p. 78.
21. *Fact Sheet on the Earnings Gap,* U.S. Department of Labor, Women's Bureau, Washington, 1970, p. 1.
22. Ruth Oltman, *Campus 1970, Where Do Women Stand? Research Report of a Survey on Women in Academe,* American Association of University Women, Washington, 1970, p. 17.
23. Quoted in *Time,* November 3, 1961, p. 68.
24. Ellen and Kenneth Kenniston, "An American Anachronism: The Image of Women and Work," *American Scholar,* vol. 33, no. 3, Summer 1969, pp. 355–75; Patricia Graham, "Women in Academe," *Science,* vol. 169, Sept. 25, 1970, pp. 1285–86.
25. Alice S. Rossi, "Equality Between the Sexes," *Daedalus,* Spring 1964, p. 623.

12. Everybody's Answer: The Community College

1. Jack C. Gernhert, "An Analysis," *Junior College Directory, 1969,* American Association of Junior Colleges, Washington, 1969, pp. 6–7; Carnegie Commission on Higher Education, *The Open Door Colleges,* McGraw-Hill, New York, 1970. The American Association of Junior Colleges predicts that, by 1975, almost 4 million students will be enrolled in 1225 2-year institutions. See *Junior College Directory, 1970,* American Association of Junior Colleges, Washington, 1970.
2. *The Open Door Colleges, op. cit.,* p. 39.
3. *Ibid.,* pp. 12, 26–27.
4. Marjorie O. Chandler, *Opening Fall Enrollment in Higher Education: Part A—Summary Data, 1968.* U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, 1969, p. 12.
5. William Morsh, *Seven State Systems of Community Colleges: California, Florida, Illinois, Michigan, New York, Texas, Washington.* A report to the Office of

Education prepared under contract by the Bureau of Social Science Research, Washington, 1970.

6. Eleanor P. Godfred, *A Study of Community Colleges and Vocational Training Centers.* An unpublished report to the Office of Education prepared under contract by the Bureau of Social Science Research, Washington, 1970.

   Christopher Jencks and David Riesman (*The Academic Revolution*, Garden City, N.Y., 1967, p. 487) depict student attitude in this regard, and also cite figures on transfer program enrollment. Data on the educational aspirations of junior college students can also be found in *National Norms for Entering College Freshmen—Fall 1969*, American Council on Education, Office of Research, 1969, p. 36. Those students who do transfer to a 4-year institution are less likely to persist than students who spent their 1st 2 years there (James W. Trent and Leland Medsker, *Beyond High School*, San Francisco, 1968, p. 89).

7. This regimentation of junior college format and standards goes hand in hand with the sorting function. Eugene Lee and Frank Bowen (*The Governance of the Multicampus University*, University of California, Berkeley, mimeo, draft, 1970, pp. 38–39) predict increasing coordination of junior colleges by universities to this end. For a description of faculty reinforcement of the traditional academic format in junior colleges, see Jencks and Riesman, *op. cit.*, pp. 487–88.

8. Clark Kerr favored this function of junior colleges in our conversation with him. Not surprisingly, the Master Plan of the California multicampus system (which has served as a model for similar systems) reflects this view (cf. *Feasibility and Desirability of Eliminating Lower Division Programs at Selected Campuses*, Coordinating Council for Higher Education, University of California, mimeo, January 1967, p. 42). Riesman and Jencks observe that junior colleges in general serve to channel off the "marginal" students (*op. cit.*, p. 491), and William Birenbaum also notes this "filtering" process (*A Time for Reconstruction*, Inaugural Address at Staten Island Community College, mimeo, September 30, 1969, p. 3). In this context, one should note the prediction by Joseph Cosano that, by 1980, community colleges and technical institutes will be entirely responsible for providing the first 2 years of college, with 4-year colleges and universities concentrating on upper division and graduate work ("The Community College in 1980," *Campus 1980*, Alvin Eurich, ed., New York, 1968, p. 37).

9. Spiro T. Agnew voiced representative arguments for the channeling of minorities into junior colleges in a speech on April 13, 1970 entitled "Toward a 'Middle way' in College Admissions," preprinted in *Educational Record*, Spring 1970, pp. 106–11. See our section above on "The Unfinished Experiment in Minority Education."

10. *Junior College Directory, 1969*, The American Association of Junior Colleges, Washington, 1969.

11. Unpublished data from Godfred, *op. cit.*

BIBLIOGRAPHY

General

Advance Report on Opening Fall Enrollment in Higher Education, Institutional Data, 1970, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, D.C., 1970.

American Science Manpower 1968, A Report of the National Register of Scientific and Technical Personnel, National Science Foundation, NSF 69-38, U.S. Government Printing Office, Washington, D.C., 1970.

ASHBY, ERIC. *Any Person, Any Study: An Essay on American Higher Education,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1971.

Aspirations, Enrollments, and Resources, The Challenge to Higher Education in the Seventies, U.S. Department of Health, Education, and Welfare, Office of Education, Joseph Froomkin, Washington, D.C., 1970, chapters 2, 4, and 9.

ASTIN, ALEXANDER W., ROBERT J. PANOS, AND JOHN A. CREAGER. "National Norms for Entering College Freshmen—Fall 1966," *ACE Research Reports,* vol. 2, no. 1, Office of Research, American Council on Education, Washington, D.C., 1967.

BAYER, ALAN E., DAVID E. DREW, ALEXANDER W. ASTIN, ROBERT F. BORUCH, AND JOHN A. CREAGER. "The First Year of College: A Follow-Up Normative Report," *ACE Research Reports,* vol. 5, no. 1, Office of Research, American Council on Education, Washington, D.C., February 1970.

BERLS, ROBERT H. *Blacks and Higher Education,* unpublished manuscript, Brookings Institution, Washington, D.C. 1971.

BOWEN, FRANK. *Necessary Next Steps,* American Council on Education, Washington, D.C., 1970.

BOWEN, HOWARD R. *The Finance of Higher Education,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1968.

BOWEN, WILLIAM G. *The Economics of the Major Private Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1968.

BOWLES, FRANK, AND FRANK A. DECOSTA. *Between Two Worlds: A Profile of Historically Negro Colleges,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1971.

California Legislature, Joint Commission on Higher Education. *The Challenge of Achievement: A Report on Public and Private Higher Education in California,* Sacramento, 1969.

The Carnegie Commission on Higher Education (Clark Kerr, Chairman), Berkeley, Calif.

A Chance to Learn: An Action Agenda for Equal Opportunity in Higher Education, McGraw-Hill, New York, March 1970.

From Isolation to Mainstream, McGraw-Hill, New York, February 1971.

Higher Education and the Nation's Health: Policies for Medical and Dental Education, McGraw-Hill, New York, October 1970.

Less Time, More Options: Education Beyond the High School, McGraw-Hill, New York, December 1970.

The Open-Door Colleges: Policies for the Community Colleges, McGraw-Hill, New York, 1970.

Quality and Equality: New Levels of Federal Responsibility for Higher Education, McGraw-Hill, New York, December 1968.

Quality and Equality: Revised Recommendations, New Levels of Federal Responsibility for Higher Education, a supplement to the 1968 report, McGraw-Hill, New York, June 1970.

Center for Research and Development in Higher Education, *Progress Report 1965–1969,* University of California, Berkeley, August 1, 1969.

The Challenge of Achievement: A Report of Public and Private Higher Education in California, Joint Commission on Higher Education of the California Legislature, 1969.

"Characteristics of American Youth," *Technical Studies,* U.S. Department of Commerce, Bureau of the Census, Washington, D.C., February 6, 1970.

"Characteristics of Students and Their Colleges October 1966," *Current Population Reports,* Series P–20, no. 183, U.S. Department of Commerce, Bureau of the Census, Washington, D.C., May 22, 1969.

CHEIT, EARL F. *The New Depression in Higher Education: A Study of Financial Conditions at 41 Colleges and Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

A Compilation of Federal Education Laws, U.S. House of Representatives, Committee on Education and Labor, Washington, D.C., 1969.

CREAGER, JOHN A., ALEXANDER W. ASTIN, ROBERT F. BORUCH, AND ALAN E. BAYER. "National Norms for Entering College Freshmen—Fall, 1968," *ACE Research Reports,* vol. 3, no. 1, 1968, and vol. 4, no. 7, 1969, Office of Research, American Council on Education, Washington, D.C.

Critique of a College, The Commission on Educational Policy, Swarthmore College, November 1967.

Digest of Educational Statistics, 1968, 1969, 1970, U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1970.

DUNHAM, E. ALDEN. *Colleges of the Forgotten Americans: A Profile of State Colleges and Regional Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1969.

Education at Berkeley, The Select Committee on Education, Academic Senate, University of California, Berkeley, March 1966.

Education Directory 1969–70, Part 3, Higher Education, U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1970.

Education in the Seventies, Planning Paper 68–1, U.S. Department of Health, Education, and Welfare, Office of Education, Office of Program Planning and Evaluation, Washington, D.C., 1970.

"Educational Attainment," Years 1967, 1968, 1969, and 1970, *Current Population Reports,* Series P–20, nos. 169, 182, 194, 207, U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

EULAU, HEINZ, AND HAROLD QUINLEY. *State Officials and Higher Education: A Survey of the Opinions and Expectations of Policy Makers in Nine States,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 170.

EURICH, ALVIN C. *Campus 1980, The Shape of the Future in Higher Education,* Academy for Educational Development, New York, 1969.

A Fact Book on Higher Education, American Council on Education, Washington, D.C., 1969.

FARRELL, ROBERT L., AND CHARLES L. ANDERSEN. *General Federal Support for Higher Education, An Analysis of Five Formulas,* working papers for The Commission on Federal Relations, American Council on Education, Washington, D.C., August 1968.

FEIN, RASHI, AND GERALD WEBER. *Financing Medical Education: An Analysis of Alternative Policies and Mechanisms,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1971.

The Governor's Commission on Education, Preliminary Report, State of Wisconsin, Madison, March 1970.

Graduate Education Parameters for Public Policy, National Science Board, National Science Foundation, Washington, D.C., 1969.

GREELEY, ANDREW M. *From Backwater to Mainstream: A Profile of Catholic Higher Education,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1969.

HANDLIN, OSCAR, AND MARY F. HANDLIN. *The American College and American Culture: Socialization as a Function of Higher Education,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

HARCLEROAD, FRED F., H. BRADLEY SAGEN, AND E. THEODORE MOLEN, Jr. *The Developing State Colleges and Universities: Historical Background, Current Status, and Future Plans,* American Association of State Colleges and Universities, Washington, D.C., October 1969.

HECKMAN, DALE M., AND WARREN BRYAN MARTIN. *Inventory of Current Research on Higher Education, 1968,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, December 1968.

HODGKINSON, HAROLD L. *Institutions in Transition: A Study of Change in Higher Education,* The Carnegie Commission on Higher Education, Berkeley, Calif., 1970.

———. "Student Protest—An Institutional and National Profile," reprinted from *The Record,* vol. 71, no. 4, May 1970, by The Carnegie Commission on Higher Education, Berkeley, Calif., 1970.

Improving Undergraduate Education, The Committee on Undergraduate Education, Michigan State University, October 1967.

Interim Report and Recommendations, The Special Committee on Educational Principles, Brown University, April 1969.

JAFFE, A. J., AND WALTER ADAMS. *Technical Progress Report, Follow Up of Cross Section of 1965–1966 High School Seniors,* Bureau of Applied Social Research, Columbia University, New York, September 1970.

KERR, CLARK, JAMES A. PERKINS, AND ROBERT L. SPROUL. "Higher Education for All," address at the First Interim Session, University of Hawaii, January 1970.

LADD, DWIGHT R. *Change in Educational Policy: Self-Studies in Selected Colleges and Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

Manpower Report of the President: A Report on Manpower Requirements, Resources, Utilization and Training. U.S. Department of Labor, Washington, D.C., March 1970.

MAYHEW, LEWIS B. *Graduate and Professional Education, 1980: A Survey of Institutional Plans,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

MEDSKER, LELAND L. AND DALE TILLERY. *Breaking the Access Barrier: A Profile of the Two-Year Colleges,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1971.

Opening Fall Enrollment in Higher Education, Report on Preliminary Survey, U.S. Department of Health, Education, and Welfare, Office of Education, George H. Wade, National Center for Educational Statistics, Washington, D.C., 1968, 1969, 1970.

"Outputs of Higher Education: Their Identification, Measurement, and Evaluation," papers from a seminar held at Washington, D.C., May 3–5, 1970, Western Interstate Commission for Higher Education, Boulder, Colo., July 1970.

PANOS, ROBERT J., ALEXANDER W. ASTIN, AND JOHN A. CREAGER. "National Norms For Entering College Freshmen—Fall 1967," *ACE Research Reports,* vol. 2, no. 7, Office of Research, American Council on Education, Washington, D.C., 1967.

Priorities in Higher Education, Report of the President's Task Force on Higher Education (Hester Commission), Washington, D.C., August 1970.

1969 Progress Report of the Board of Regents and the Regents Statewide Plan for the Expansion and Development of Higher Education, 1968, The University of the State of New York, The State Education Department, Albany, N.Y., November 1, 1969.

Projections of Education Statistics to 1977–78, U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1969.

The Reforming of General Education: The Columbia College Experience in Its National Setting, by Daniel Bell, Columbia University Press, New York, 1966.

Report, The Committee on Academic Innovation and Development, Academic Senate, University of California, Los Angeles, November 1967.

Report of the American Bar Association, Commission on Campus Government and Student Dissent, American Bar Association, Chicago, 1969.

Report of the President's Commission on Campus Unrest (Scranton Commission), no. 277, Commerce Clearing House, Inc., Washington, D.C., September 29, 1970.

R[illegible]LIN, ALICE M. *The Role of the Federal Government in Financing Higher Education,* The Brookings Institution, Washington, D.C., 1961.

SANDERS, IRWIN T., AND JENNIFER C. WARD. *Bridges to Understanding: International Programs of American Colleges and Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

"School Enrollment," Years 1966, 1967, 1968, 1969, 1970, *Current Population Reports,* Series P-20, nos. 179, 190, 206, U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

SCHULTZE, CHARLES L., et al. *Setting National Priorities: The 1971 Budget,* The Brookings Institution, Washington, D.C., pp. 55–82, 197[illegible]

SPAETH, JOE L., AND ANDREW M. GREELEY. *Recent [illegible] and Higher Education: A Survey of College Graduates,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

SPURR, STEPHEN H. *Academic Degree Structures: Innovative Approaches: Principles of Reform in Degree Structures in the United States,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

Study of Education at Stanford, The Steering Committee of the Study of Education at Stanford, Stanford University, November 1968 *et seq.*

The Study of Educational Policies and Programs at Wesleyan, Wesleyan University, Middletown, Conn., May 1968.

Toward Balanced Growth: Quantity with Quality, Report of the National Goals Research Staff, The White House, Washington, D.C., July 4, 1970.

Toward a Public Policy for Graduate Education in the Sciences, National Science Board, National Science Foundation, Washington, D.C., 1969.

Toward Unity from Diversity, The University-wide Educational Policies Committee, University of New Hampshire, February 1967.

Undergraduate Instruction in Arts and Sciences, The Presidental Advisory Committee on Undergraduate Instruction, Faculty of Arts and Sciences, University of Toronto, July 1967.

U.S. Congress, Joint Economic Committee. *The Economics and Financing of Higher Education in the United States,* A Compendium of Papers by Robert Berls, Roger Bolton, Howard R. Bowen, William G. Bowen, Allan M. Cartter, Michael Clurman, Andre Daniere, Robert L. Farrell, Paul Feldman, Roger A. Freeman, W. Lee Hanson, Seymour E. Harris, Stephen A. Hoenack, Hans H. Jenny, Clark Kerr, Ferdinand K. Levy, Selma J. Mushkin, Alice M. Rivlin, David Segal, Kenneth A. Simon, Neil Singer, James H. Strauss, Ralph W. Tyler, Burton Weisbrod, Jeffrey H. Weiss, Richard G. Wynn, Jerrold R. Zacharias; 91st Congress, 1st Session, U.S. Government Printing Office, Washington, D.C., 1969.

U.S. Department of Health, Education, and Welfare, Office of the Assistant Secretary for Planning and Evaluation. *Toward A Long-Range Plan for Federal Financial Support for Higher Education: A Report to the President* (Rivlin Report), Washington, D.C., January 1969.

U.S. Manpower in the 1970's: Opportunity and Challenge, U.S. Department of Labor, Washington, D.C., 1970.

Varieties of Learning Experience, The Subcommittee on Curriculum, Undergraduate Faculty Council, Duke University, Durham, N.C., March 1968.

WOLK, RON. *Alternative Methods of Federal Funding for Higher Education,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1968.

The Paradox of Access

Admission and Retention of Students, Master Plan, Phase III, Committee B, State of Illinois Board of Higher Education, June 1969.

Aspirations, Enrollments and Resources: The Challenge to Higher Education in the Seventies, Department of Health, Education, and Welfare Office of Education, Joseph Froomkin, Washington, D.C., 1970.

ASTIN, ALEXANDER W. *Institutional Status in American Higher Education,* American Council on Education, Washington, D.C., 1970.

———. *Some New Directions for Higher Education: A Research Perspective, ACE Research Reports,* Office of Research, American Council on Education, Washington, D.C., 1968.

———. "Undergraduate Achievement and Institutional 'Excellence'," *Science,* vol. 161, August 1968, pp. 661–68.

———, AND ROBERT J. PANOS. "Attrition Among College Students," *American Educational Research Journal,* January 1968, pp. 57–72.

———, AND JOHN A. CREAGER. "National Norms for Entering College Freshman—Fall 1966," *ACE Research Reports,* vol. 2, no. 1, Office of Research, American Council on Education, Washington, D.C., 1967.

"Attrition, Persistence, and Attendance of the California State Colleges 1963 First-Time Freshmen," *Technical Memorandum #2,* California State Colleges, Division of Institutional Research, Los Angeles, Calif., May 1970.

BAYER, ALAN, DAVID E. DREW, ALEXANDER W. ASTIN, ROBERT F. BORUCH, AND JOHN A. CREAGER. "The First Year of College: A Follow-up Normative Report," *ACE Research Reports,* vol. 5, no. 1, Office of Research, American Council on Education, Washington, D.C., February 1970.

BIRENBAUM, WILLIAM M. *Planning Qualitative Disruption: A Critique of the Inferior Unrest Our Campuses Promote,* memo for the American Council on Education's Special Committee on Campus Tensions, November 20, 1969.

———. *Something for Everybody Is Not Enough,* 53rd Annual Meeting, American Council on Education, St. Louis, Mo., October 1970.

———. *Who Should Go to College?* 25th National Conference on Higher Education, American Association for Higher Education, Chicago, Ill., March 1–4, 1970.

California State Colleges, Division of Institutional Research, Los Angeles:

Those Who Made It: Selected Characteristics of the June 1967 California State College Baccalaureate Graduates, January 1969.

An Addendum to "Those Who Made It," September 1969.

Admissions Study Digest: A summary of the California State Colleges 1963 Admissions Study—Phase I, April 1969.

Five Years Later: A Follow-Up to the California State Colleges 1963 Admissions Study—Phase II, April 1970.

The Challenge of Achievement: A Report on Public and Private Higher Education in California, Report of The Joint Committee on Higher Education of the California Legislature, Sacramento, Calif., 1969.

CLARK, BURTON R. "The 'Cooling-Out' Function in Higher Education," *The American Journal of Sociology,* pp. 569–76, 1967.

College and University Enrollment, Preliminary Survey, The University of the State of New York, The State Education Department, Albany, N.Y., Fall 1969.

COPE, ROBERT G. "Limitations of Attrition Rates and Causes Given for Dropping Out of College," *Journal of College Student Personnel,* vol. 9, November 1968, pp. 386–92.

CREAGER, JOHN A., Alexander W. Astin, Robert A. Boruch, Alan E. Bayer, and David E. Drew. "National Norms for Entering College Freshman—Fall, 1969," *ACE Research Reports,* vol. 4, no. 7, Office of Research, American Council on Education, Washington, D.C., 1969.

Digest of Educational Statistics, 1970, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, D.C., 1970.

DOEBLER, CHARLES H. *New Measurements for Admission* (an abridgement and interpretation of the study of admission criteria and risks at Brown University under a grant from the Ford Foundation), Providence, R.I., April 1970.

ECKLAND, BRUCE K. "College Dropouts Who Came Back," *Harvard Educational Review,* 1964, pp. 402–20.

———. "Social Class and College Graduation, Some Misconceptions Corrected," *American Journal of Sociology,* 1964, pp. 36–50.

———. "A Source of Error in College Attrition Studies," *Sociology of Education,* vol. 38, Fall 1964, pp. 60–72.

ETZIONI, AMITAI, AND MURRAY MILNER. *Higher Education in an active Society: A Policy Study,* Bureau of Social Science Research, Inc., Washington, D.C., March 1970.

Feasibility and Desirability of Eliminating Lower Division Programs at Selected Campuses of the University of California and the California State Colleges, Coordinating Council for Higher Education, Sacramento, January 6, 1967.

"For Tomorrow's Students, Multiple Choices," *Fortune,* November 1970, p. 147.

HEALY, TIMOTHY S. "Will Everyman Destroy the University?" *Saturday Review,* December 20, 1969, pp. 54–66, 67–69.

IFFERT, R. E., AND BETTY CLARKE. *College Applicants, Entrants and Dropouts,* U.S. Office of Education Bulletin No. 29, U.S. Government Printing Office, Washington, D.C., 1965.

JAFFE, A. J., AND WALTER ADAMS. "Academic and Socio-Economic Factors Related to Entrance and Retention at Two- and Four-Year Colleges in the Late 1960s," Bureau of Applied Social Research, Columbia University, New York, 1970.

KENISTON, KENNETH. "What's Bugging the Students?" *Educational Record,* vol. 51, no. 2, Spring 1970, pp. 116–29.

KNOELL, DOROTHY. "Needed Research on College Dropouts," in James Montgomery (ed.), *College Dropouts,* Cooperative Research Project F–065, University of Tennessee, Knoxville, 1964.

———; AND LELAND MEDSKER. *Factors Affecting the Performance of Transfer Students From Two to Four Year Colleges,* U.S. Office of Education Cooperative Research Project No. 1133, University of California, Berkeley, 1964, p. 177.

LIVINGSTON, JAMES A. *Five Year Follow-Up Study, Report # 1, Acalanes Union High School District,* LaFayette, Calif., June 1968.

MACMILLAN, THOMAS. Northern California Cooperative Research Project on Student Withdrawals (*NORCAL*), *Phase I Final Report* and *Phase II Final Report,* a federally and locally funded study of 23 participating community colleges, Norcal Research Committee, Foothill College, Los Altos Hills, Calif., 1969 and 1970.

MEDSKER, LELAND. *Progress Report 1965–69,* The Center for Research and Development in Higher Education, University of California, Berkeley, August 1969.

MONTGOMERY, JAMES.. *College Dropouts,* cooperative Research Project F–065, University of Tennessee, Knoxville, 1964.

"Most Students Don't Graduate in Four Years," *Sunday Standard,* Sunnyvale, Calif. July 5, 1970, p. 17.

Opening Fall Enrollment in Higher Education, 1968, Summary Data, 1969; *Opening Fall Enrollment in Higher Education, 1969—Basic Information: Report on Preliminary Survey,* 1971; *Advance Statistics on Opening Fall Enrollment in Higher Education, 1969: Basic Information,* 1970; *Advance Report on Opening Fall Enrollment in Higher Education, Institutional Data, 1970,* 1970; *Opening Fall Enrollment in Colleges and Universities, 1970, State and National Totals,* 1970, U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1970.

PERL, LEWIS, J., AND MARTIN R. KATZMAN. *Student Flows in California's System of Higher Education,* Office of the Vice President for Planning and Analysis, University of California, Berkeley, 1969.

Project Talent, American Institutes for Research, Palo Atlo, Calif.:

A National Data Resource for Behavioral Social and Educational Research, January 1968

The Story of Project Talent, November 1959

Cognitive Growth During High School, April 1967

News of Project Talent, June 1960

Progress Toward the Goals of Project Talent, February 1965

The Project Talent One-Year Follow-up Studies, July 1966

The Tests of Project Talent, December 1960.

Projections of Educational Statistics to 1978–79, 1969 edition, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, D.C., 1969.

"School Enrollment: October 1969," "October 1968 and 1967," and "October 1966," *Current Population Reports,* Series P–20, nos. 206, 190 and 167, U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

SEWELL, WILLIAM H., AND VIMAL P. SHAH. "Socioeconomic Status, Intelligence, and the Attainment of Higher Education," *Sociology of Education*, Winter 1970, vol. 40, pp. 1–23.

SUMMERSKILL, NEIL. "Dropouts from College," in Nevitt Sanford (ed.), *The American College*, New York, 1962.

TRENT, JAMES W. AND LELAND L. MEDSKER. *Beyond High School: A Psychosociological Study of 10,000 High School Graduates*, Jossey-Bass, San Francisco, Calif., 1968.

The Undergraduate Student and His Higher Education: Withdrawal from College and Its Likelihood, Coordinating Council for Higher Education, Sacramento, Calif., March 1969.

U.S. Congress, Joint Economic Committee. *The Economics and Financing of Higher Education in the United States*, 91st Congress, 1st Session, U.S. Government Printing Office, Washington, 1969. See especially Berls, Robert H., "Higher Education Opportunity and Achievement in the United States," pp. 145–204, and Tyler, Ralph W., "The Changing Structure of American Institutions of Higher Education," pp. 305–20.

WILLINGHAM, WARREN W. *Free-Access Higher Education*, College Entrance Examination Board, New York, 1970.

The Lockstep

"Absenteeism in Employees," *Fortune*, July 1970.

BREWSTER, KINGMAN, JR. "The Involuntary Campus and the Manipulated Society," *Educational Record*, vol. 51, no. 2, Spring 1970.

Carnegie Commission on Higher Education. *Less Time, More Options—Education Beyond the High School*, Berkeley, Calif., December 1970.

"College-Trained Youth Shun the Professions for a Free-Form Life," *Wall Street Journal*, June 24, 1970.

"Dropping Out Cuts Delinquency," *Psychology Today*, vol. 4, no. 1, June 1970.

The Economics and Financing of Higher Education in the United States. A Compendium of Papers submitted to the Joint Economic Committee, 91st Congress, 1st Session, U.S. Government Printing Office, Washington, D.C., 1969.

ERICKSON, ERIC. *Identity, Youth and Crisis*, Norton, New York, 1968.

FALTERMAYER, EDMUND K. "Let's Break the Go-to-College Lockstep," *Fortune*, November 1970, p. 103.

" 'Higher' Education is Not for Everyone, Says Princeton's Machlup," *The Chronicle of Higher Education*, New York, November 16, 1970.

JENCKS, CHRISTOPHER, AND DAVID RIESMAN, *The Academic Revolution*, Garden City, N.Y., 1969, chs. 1 and 2.

KATZ, JOSEPH, AND ASSOCIATES. *No Time for Youth: Growth and Constraint in College Students*, Jossey-Bass, San Francisco, 1968, p. 21.

KATZ, JOSEPH, HAROLD A. KORN, CAROLE A. LELAND, and MAX M. LEVIN. *Class, Character, and Career: Determinants of Occupational Choice in College Students*, Institute for the Study of Human Problems, Stanford University, Stanford, Calif., April 1969.

KENISTON, KENNETH. *The Uncommitted: Alienated Youth in American Society*, Delta, New York, 1966.

———. "What's Bugging the Students?" *Educational Record*, vol. 51, no. 2, Spring 1970, pp. 116–29.

McGILL, WILLIAM J. "Technology is Generating Major Problems in Education," *University Bulletin,* University of California, vol. 19, no. 3, August 10, 1970.

New York Times, New York:

"New Campus Problem: Young Drifters," November 10, 1970, p. 1.

"Street People Are Now Tougher Breed," March 6, 1971, p. 1.

PANOS, ROBERT J., and ALEXANDER W. ASTIN. "Attrition Among College Students," *American Educational Research Journal,* vol. 5, no. 1, January 1968.

SANFORD, NEVITT. *Where Colleges Fail,* Jossey-Bass, San Francisco, 1967.

SCHOENFELDT, LYLE F., ALAN E. BAYER, and MARSHA D. BROWN. "Delayed and Normal Progress College Students: A Comparison of Psycho-Social Characteristics and Career Plans," *American Educational Research Journal,* vol. VII, no. 2 (March 1970), pp. 235–80.

A Survey of Returned Peace Corps Volunteers, Study #1929, Louis Harris and Associates, Inc., August 1969.

Those Who Made It, California State Colleges, Division of Institutional Research, Los Angeles, January 1969, p. 11.

TRENT, JAMES W., and LELAND L. MEDSKER. *Beyond High School,* San Francisco, 1968, pp. 76–79, 84, 87, 89, 104–05.

Educational Apartheid

ABRAMS, JANET F., and WILLIAM S. ROYCE. *Continuing Higher Education in California,* Stanford Research Institute, Menlo Park, Calif., January 1969.

BASKIN, SAMUEL. "Universities: 'What Tearing Down the Wall' Can Do," *New York Times,* Education Section, December 27, 1970.

BIRENBAUM, WILLIAM M. *Something for Everybody Is Not Enough,* 53d Annual Meeting, American Council on Education, St. Louis, Mo., October 1970.

Carnegie Commission on Higher Education. *Less Time, More Options: Education Beyond The High School,* Berkeley, Calif., December 1970.

NEIGHBOR, J. BRUCE. *Management Decisions in Lifelong Learning for the Next Decade: Developing and Utilizing New Channels to Opportunity,* unpublished, MCA, Inc., Universal City, Calif., 1970.

NICHOLSON, EVERARD. *Success and Admission Criteria for Potentially Successful Risks,* Brown University, Providence, R.I., March 1970.

"The Open University," *Reports on Education,* no. 56. Department of Education and Science, London, June 1969.

Preliminary Report of the State of Wisconsin, Governor's Commission on Education, Madison, March 1970.

RIVLIN, ALICE M., and JEFFREY H. WEISS. "Social Goals and Federal Support of Higher Education—The Implications of Various Strategies," *Economics and Financing of Higher Education in the United States,* Joint Economic Committee, 91st Congress, 1st Session, U.S. Government Printing Office, Washington, D.C., 1969.

SPURR, STEPHEN H. *Academic Degree Structures: Innovative Approaches,* The Carnegie Commission on Higher Education, McGraw-Hill, 1970, p. 127.

WILLINGHAM, WARREN W. *Free-Access Higher Education,* College Entrance Examination Board, New York, 1970.

The Homogenization of Higher Education

ASTIN, ALEXANDER W. *Some New Directions for Higher Education: A Research Perspective,* American Council on Education, Washington, D.C., 1970.

AXELROD, JOSEPH. "An Experimental College Model," *Educational Record,* vol. 48, Fall 1967.

BIRENBAUM, WILLIAM M. *Something for Everybody Is Not Enough,* 53rd Annual Mee ng, American Council on Education, St. Louis, Mo., October 1970.

"Campus Revolution, Johnston College Style," *Think,* September/October 1970.

"The Changing Four-Year Colleges," *Issues In Higher Education,* no. 1, 1970, Southern Regional Education Board, Atlanta, Ga.

The Co-op Handbook, Northeastern University, Boston, Mass., 1969–70.

DUNHAM, ALDEN E. *Colleges of the Forgotten Americans—A Profile of State Colleges and Regional Universities,* Carnegie Commission on Higher Education, McGraw-Hill, New York, 1969.

FARBER, M. A. "Rise in Uniformity Found Among Nation's Colleges," *New York Times,* July 19, 1970.

GAFF, JERRY G., AND ASSOCIATES. *The Cluster College,* Jossey-Bass, San Francisco, Calif. 1970.

GIBBONS, JAMES. "Employment Educational Television," unpublished, Stanford University, Stanford, Calif.

GREENLEY, ANDREW M. *From Backwater to Mainstream, A Profile of Catholic Higher Education,* The Carnegie Commission on Higher Education, Berkeley, Calif., 1969.

"Hampshire College: A Quest for Quality, A Balanced Budget," *Science,* vol. 70 November 27, 1970.

HODGKINSON, HAROLD L. *Institutions in Transition, A Study of Change in Higher Education,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

"The Idea of a New University," *The Center Magazine,* March 1970, pp. 47–60.

JACOBSON, ROBERT L. "Small Colleges Face Shortage of Students," *Chronicle of Higher Education,* August 31, 1970.

JENCKS, CHRISTOPHER, AND DAVID RIESMAN. *The Academic Revolution,* Garden City, N.Y., 1969.

LADD, DWIGHT R. *Change in Educational Policy: Self Studies in Selected Colleges and Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

MCCONNELL, T. R., and PAUL HEIST. "The Diverse College Student Population," *The American College: The Psychological and Social Interpretation of the Higher Learning,* Nevitt Sanford, ed., Wiley, New York, 1962.

MEYER, JOHN W. *The Charter: Conditions of Diffuse Socialization in Schools,* Stanford University, Stanford, Calif., 1969.

STEVENS, WILLIAM K. "Freer Choice of Studies Gaining in U.S. Colleges," *New York Times,* November 9, 1970.

"Universities: 'What Tearing Down the Wall' Can Do," by Samuel Baskin, Director, University Without Walls Program, Yellow Springs, Ohio, *The New York Times,* Education Section, December 27, 1970.

WOOLDRIDGE, ROY L. *Cooperative Education,* Northeastern University, Boston, Mass., May 1969.

The Professionalization of Learning

Academic Tenure in California Public Higher Education, Report No. 69–5, Coordinating Council for Higher Education, Sacramento, Calif., May 6, 1969.

ARROWSMITH, WILLIAM. "The Future of College Teaching," *Campus 1980,* New York, 1968, pp. 116–33.

BARDS, ALAN E. "College and University Faculty, A Statistical Description," *ACE Research Reports,* vol. 5, no. 5, Office of Research, American Council on Education, Washington, D.C. 1970.

"The Causes of Student Protest," *The Report of the President's Commission on Campus Unrest* (The Scranton Commission), 1970.

COOMBS, PHILLIP H. *The World Educational Crisis,* Oxford University Press, New York, 1968.

D'HEILLY, JEAN LOUIS. "Needed: A Student Voice on Tenure," *Change,* November/December 1970.

DUNHAM, ALDEN E. *Colleges of the Forgotten Americans,* The Carnegie Commission on Higher Education, Berkeley, Calif., 1969.

DUNHAM, RALPH E., PATRICIA S. WRIGHT, AND MARJORIE O. CHANDLER. *Teaching Faculty in Universities and Four-Year Colleges,* U.S. Department of Health, Education, and Welfare, Office of Education, Higher Education and Studies Branch, Washington, D.C., Spring 1963.

The Education Professions: An Annual Report on the People Who Serve Our Schools and Colleges—1969–70, U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Educational Personnel Development, Washington, D.C., September 1970.

ERICKSON, STANFORD C., AND FRANK KOEN. "An Analysis of the Specific Features Which Characterize the More Successful Programs for the Recruitment and Training of College Teachers," University of Michigan Center for Research on Learning and Teaching (OEC–6–10–227, ERIC ED 010 556), Ann Arbor, 1967, 81 pp.

GAGE, NATHAN, ed. *Research in Teaching,* American Educational Research Association, Rand McNally, Chicago, 1964.

HITCH, CHARLES J. "Statement on Improvement of Undergraduate Teaching," *University of California News,* November 17, 1970.

HUGHES, JENNY, ed. "Restrictions on University Places? Well, This Is a Government Which Doesn't Shy Away From the Word Selection," *Faculty,* London, July 1970.

ILLICH, IVAR. "Education Without School: How It Can Be Done?" Special supplement, *The New York Review,* January 7, 1971.

IRVING, CARL. "Kerr Worries About Faculty, Not Students," *San Francisco Sunday Examiner and Chronicle,* July 19, 1970, p. 14.

JANTSCH, ERICK. *Integrative Planning for the "Joint Systems" of Sociology and Technology—The Emerging Role of the University,* Massachusetts Institute of Technology, Cambridge, May 1969.

JENCKS, CHRISTOPHER, AND DAVID RIESMAN. *The Academic Revolution,* Garden City, N.Y., 1969.

LADD, DWIGHT R. *Change in Educational Policy: Self Studies in Selected Colleges and Universities,* for The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970; based on self-studies at the University of California (Berkeley), University of New Hampshire, University of Toronto, Swarthmore College, Wesleyan University, Michigan State University, Duke University, Brown University, Standford University, Columbia University, University of California at Los Angeles.

LEVIEN, ROGER E. *National Institute of Education, Preliminary Plan for the Proposed Institute,* draft, October 1970, to be published 1971.

MCKEACHIE, WILBERT J. *Offering Course Options: Personality, Option Preference and Course Outcomes,* American Educational Research Association Annual Conference (ERIC ED 038 940 and HE 001 508), Washington, D.C. 1970.

———, et al. *Research on the Characteristics of Effective Teaching, Final Report,* (OE–4–10–001, ERIC ED 024 347 and HE 000 149), Ann Arbor, 1968, 820 pp.

———. *Research on College Teaching: A Review,* Report 6 ERIC Clearinghouse on Higher Education, George Washington University, Washington, D.C., November 1970.

MORSS, ELLIOTT R. *The Faculty Failure in Higher Education: Causes, Results, and What Should be Done About it,* unpublished, The Urban Institute, Washington, D.C., 1970.

SILBERMAN, CHARLES E. *Crisis In the Classroom, The Remaking of American Education,* Random House, New York, 1970.

———. "Roadblocks on the Road to Learning," *The National Observer,* November 2, 1970.

To Improve Learning, A Report to the President and the Congress of the United States by The Commission on Instructional Technology, Committee on Education and Labor, House of Representatives, 91st Congress, 2d Session, Washington, D.C., March 1970.

University of California, Office of the Vice President for Planning and Analysis. *Faculty Effort and Output Study,* and *Report to the Regents, January 1970,* Berkeley.

WARD, F. CHAMPION. *Knowing, Acting and Working: A Note on the College Curriculum,* unpublished, Ford Foundation, New York.

WILSON, ROBERT C., AND JERRY G. GAFF. "Faculty Supporters of Change," *The Research Reporter,* Center for Research and Development In Higher Education, University of California, Berkeley, Fall 1970

The Growth of Bureaucracy

ABRAHAMS, LOUISE. *State Planning for Higher Education,* The Academy for Educational Development, Inc., Washington, D.C., December 1969.

AITKEN, ROBERT. *Administration of a University,* University of London Press, London, 1966.

Carnegie Commission on Higher Education. *The Capital and the Congress: State Responsibility for Post Secondary Education,* Berkeley, Calif., June 10, 1970.

"Collective Bargaining With the Faculty," *College Management,* August 1970.

COSAND, JOSEPH. "The Community College in 1980," *Campus 1980,* New York, 1968, p. 139.

CRAWL, JOHN A. "Some Public Colleges Face 'Austerity Operations' Despite $7-Billion in State Funds for 1970–71," *Chronicle of Higher Education,* October 12, 1970

DUNHAM, ALDEN E. *Colleges of the Forgotten Americans—A Profile of State Colleges and Regional Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1969.

The Economics and Financing of Higher Education in the United States: A Compendium of Papers, Joint Economic Committee, 91st Congress, 1st Session, U.S. Government Printing Office, Washington, D.C., 1969, pp. 107–375.

EULAU, HEINZ, AND HAROLD QUINLEY. *State Officials and Higher Education—A Survey of Opinions and Expectations of Policy Makers in Nine States,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970, p. 63.

FEUER, LEWIS. *The Conflict of Generations: The Character and Significance of Student Movements,* Basic Books, New York, 1969.

HARCLEROAD, FRED F., H. BRADLEY SAGEN, AND THEODORE MOLEN, Jr. *The Developing State Colleges and Universities: Historical Background, Current Status, and Future Plans,* American Association of State Colleges and Universities, Washington, D.C., October 1969.

HITCH, CHARLES. "New Statement on Duties of Department Chairman (or Equivalent Officers) Recently Issued," *University Bulletin,* University of California, Berkeley, vol. 19, no. 3, August 10, 1970.

HODGKINSON, HAROLD I. *Institutions in Transition—A Study of Change in Higher Education,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

KERR, CLARK. "Presidential Discontent," *Perspectives on Campus Tensions: Papers Prepared for the Special Committee on Campus Tensions,* American Council on Education, Washington, D.C., September 1970.

"Labor-Campus Link: Union Heads, Academic Leaders Discuss Alliance," *Science,* October 30, 1970.

LEE, EUGENE C., AND FRANK M. BOWEN. *The Governance of the Multi-Campus University,* draft, The Carnegie Commission o Higher Education, Berkeley, Calif., 1970.

Master Plan for Higher Education, Commonwealth of Pennsylvania, 1966, Pennsylvania Department of Education, Harrisburg, Pa.

Master Plan for Higher Education in California, 1960–1975, Legislature of the State of California, 1960, in cooperation with the State Department of Education; implemented in the Donahoe Act, 1960, Sacramento.

Master Plan for Higher Education in California, 1975– , Joint Legislative Committee on the Master Plan for Higher Education, State Capitol, in preparation, Sacramento, Calif.

MCCLINTICK, DAVID, AND ART SEARS, JR. "Decentralized District in a New York Ghetto Claims Gains in Schools," *Wall Street Journal,* April 10, 1969.

MCFARLANE, WILLIAM H. *State Support for Private Higher Education,* Southern Regional Education Board, Atlanta, Ga., 1969.

Opening (Fall) Enrollment in Higher Education, 1960: Analytic Report, U.S. Department of Health, Education, and Welfare, Office of Education, Circular 652, Washington, D.C., 1960.

PALOLA, ERNEST. "Academic Reform, A Challenge for Statewide Planners," *The Research Reporter,* Center for Research and Development in Higher Education, University of California, Berkeley, vol. V, no. 2, 1970, pp. 1–4.

———, LEHMANN, T., AND BLISCHKE, W. R. *Higher Education by Design: The Sociology of Planning,* Center for Research and Development in Higher Education, University of California, Berkeley, 1970.

PALTRIDGE, JAMES GILBERT. "Toward a Systems Model for State Coordination," *Educational Record,* Winter 1969, pp. 71–77.

Preliminary Report of the Governor's Commission on Education, State of Wisconsin, Madison, March 1970.

Princeton University. *The Governing of Princeton University: Final Report of the Special Committee on the Structure of the University,* Princeton, N.J., April 1970.

Progress Report, 1965–1969, Center for Research and Development in Higher Education, University of California, Berkeley, 1969, pp. 64–65.

The 1969 Progress Report of the Board of Regents on the Regents Statewide Plan for the Expansion and Development of Higher Education, 1968, Office of Planning in Higher Education, New York State Education Department, Albany, N.Y., November, 1969.

The Regents Statewide Plan for the Expansion and Development of Higher Education, 1968, Office of Planning in Higher Education, State Education Department, Albany, N.Y., March 1969.

"Report of the Select Committee on the Future of Private and Independent Higher Education in New York State," *New York State and Private Higher Education,* January 1968.

"Rise in Collective Bargaining Poses Philosophical Problems for Professors," *Chronicle of Higher Education,* May 25, 1970.

RIVLIN, ALICE M., AND JUNE O'NEIL. "Growth and Change in Higher Education," *The Corporation and the Campus: Corporate Support of Higher Education in the 1970's,* The Academy of Political Science, 1970.

SMART, JOHN M. *Feasibility and Desirability of Eliminating Lower Division Programs at Selected Campuses of the University of California and the California State Colleges,* Coordinating Council for Higher Education, Sacramento, Calif., January 6, 1967.

State Aid to Private Higher Education, A Study of Ways of Providing Public Resources for Support of Private Institutions of Higher Education in California, Coordinating Council for Higher Education, Sacramento, Calif., December 1–2, 1969.

Strengthening Private Education in Illinois: A Report on the State's Role, Illinois Board of Higher Education, Springfield, March 1969.

Summary of State Legislation Affecting Higher Education in the West, 1969, Western Interstate Commission for Higher Education, Boulder, Colo., November 1969.

The Illegitimacy of Cost Effectiveness

ABRAHAMS, LOUISE. *State Planning for Higher Education,* The Academy for Educational Development, Inc., Washington, D.C., December 1969.

BOWEN, HOWARD R. "Does Private Education Have a Future?" Speech delivered in Cincinnati, Ohio, at the annual meetings of the Association of American Colleges, January 12, 1971.

BOWEN, WILLIAM G. *The Economics of the Major Private Universities,* The Carnegie Commission on Higher Education, Berkeley, Calif., 1968.

BOWLES, SAMUEL. "The Efficient Allocation of Resources in Education," *Quarterly Journal of Economics,* May 1967, p. 189.

BUTTER, IRENE H. *Economics of Graduate Education: An Exploratory Study,* U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1966.

CAMPBELL, THOMAS J. *Procedural Guidelines—Program Cost Allocation Studies in Medical Centers,* draft, Association of American Medical Colleges, Evanston, Ill., September 24, 1969.

CHAMBERLAIN, NEIL W., ED. "The Economics of Higher Education," *Contemporary Economic Issues,* June 1969, pp. 145–84.

CHAMBERS, M. M. *Appropriations of State Tax Funds for Operating Expenses of Higher Education 1969–1970,* Office of Institutional Research, National Association of State Universities and Land-Grant Colleges, Washington, D.C.

CHEIT, EARL F. *The New Depression in Higher Education: A Study of Financial Conditions at 41 Colleges and Universities,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, November 1970.

CROWL, JOHN A. "Some Public Colleges Face 'Austerity Operations' Despite $7-Billion in State Funds for 1970–71," *Chronicle of Higher Education,* vol. 5, no. 3, October 12, 1970.

CULLITY, JOHN P. "The Growth of Educational Employment in Three Countries 1895–1964," *Journal of Human Resources*, vol. IV, no. 1, Winter 1969, pp. 84–92.

DAVIS, JAMES W., JR., ED. *Politics, Programs, and Budgets*, Prentice-Hall, Inc., Englewood Cliffs, N.J., 1969, pp. 162–77.

The Economics and Financing of Higher Education in the United States, A Compendium of Papers, Joint Economic Committee, Congress of the United States, 91st Congress, 1st Session, U.S. Government Printing Office, Washington, D.C., 1969.

Berls, Robert H. "An Exploration of the Determinants of Effectiveness in Higher Education," pp. 207–60.

Bolton, Roger E. "The Economics and Public Financing of Higher Education: An Overview," pp. 11–106.

Bowen, Howard R. "Tuitions and Student Loans in the Finance of Higher Education," pp. 618–31.

Bowen, William G. "Economic Pressures on the Major Private Universities," pp. 399–439.

Clurman, Michael. "Does Higher Education Need More Money?" pp. 632–51.

Daniere, Andre. "The Benefits and Costs of Alternative Federal Programs of Financial Aid to College Students," pp. 556–98.

Freeman, Roger A. "Federal Assistance to Higher Education Through Income Tax Credits," pp. 564–83.

Hansen, W. Lee, and Burton A. Weisbrod. "The Search for Equity in the Provision and Finance of Higher Education," pp. 107–23.

Harris, Seymour E. "Financing Higher Education: An Overview," pp. 467–506.

Jenny, Hans H., and G. Richard Wynn. "Expenditure Expectations for Private Colleges," pp. 440–66.

———. "Short-Run Cost Variations in Institutions of Higher Learning," pp. 261–94.

Kerr, Clark. "Federal Aid to Higher Education Through 1976," pp. 599–617.

Levy, Ferdinand K. "Sources of Economics of Scale in Universities," pp. 295–304.

Mushkin, Selma J. "A Note on State and Local Financing of Higher Education," pp. 530–40.

Rivlin, Alice M., and Jeffrey H. Weiss. "Social Goals and Federal Support of Higher Education—The Implications of Various Strategies," pp. 543–55.

Segal, David. " 'Equity' Versus 'Efficiency' in Higher Education," pp. 135–44.

Simon, Kenneth A. "The Planning of U.S. Higher Education: Projections of Enrollment, Degrees, Staff, and Expenditures to 1977–78," pp. 321–56.

Singer, Neil, and Paul Feldman. "Criteria for Public Investment in Higher Education," pp. 124–34.

Zacharias, Jerrold R. "Educational Opportunity Through Student Loans: An Approach to Higher Education Financing," pp. 652–63.

EURICH, ALVIN C. *Reforming American Education*, Harper & Row, New York, 1970.

Federal Support to Universities and Colleges, Fiscal years 1963–1966, Office of Science and Technology, National Science Foundation, Washington, D.C., December 1968.

FROOMKIN, J. *Aspirations, Enrollmenis, and Resources*, U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1970.

GILMORE, ROBERT B. "Making University Financial Reports Informative and Meaningful," *NACUBO Professional File*, vol. 1, no. 5, October 1970.

GULKO, WARREN W. *The Resource Requirements Prediction Model (RRPM–1): An Overview*, Western Interstate Commission of Higher Education, Boulder, Colo., October 1970.

HOLSENDOLPH, ERNEST. "A Tale of Two Universities," *Fortune*, February 1971.

"Investment in Human Beings," *The Journal of Political Economy*, vol. 70, no. 5, part 2, October 1962, 8 articles.

JOHNSON, CHARLES B., and WILLIAM G. KASTENMEYER, eds. *Management Information Systems in Higher Education: The State of the Art*, Duke University Press, Durham, N.C., 1969.

KELLER, JOHN E. *Higher Education Objectives: Measures of Performance and Effectiveness*, University of California, Office of the Vice President for Planning and Analysis, May 1970.

KOULOURIANOS, D. *Educational Planning for Economic Growth*, TR #23, Center for Research in Management Science, University of California, Berkeley, 1967.

LEVIN, HENRY M., and JACK W. OSMAN. *Alternative Methods of State Support for Independent Higher Education in California*, Coordinating Council for Higher Education, Sacramento, January 1, 1970.

MACHLUP, FRITZ. *Education and Economic Growth*, University of Nebraska Press, Lincoln, 1970, p. 86.

MARIEN, MICHAEL. "External Credit and Internal Discredit: Intertwining Developments That May Revolutionize Higher Education," working draft, January 1971, Educational Policy Research Center, Syracuse University Research Corp., Syracuse, N.Y.

MARSHALL, K., and R. OLIVER. "A Constant Work Model for Student Attendance and Enrollment," *Operations Research*, vol. 18, 1970, pp. 193–206.

MEIER, RICHARD L. "Efficiency Criteria for the Operation of Large Libraries," *Library Quarterly*, vol. 31, 1961, pp. 215–34.

MERTINS, PAUL F., AND NORMAN J. BRANDT. *Financial Statistics of Institutions of Higher Education: Current Funds Revenues and Expenditures; Physical Plant Assets, 1967–68*, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Washington, D.C., 1970.

Michigan Council of State College Presidents. *Unit Cost Study: Instruction and Departmental Research, 1968–69: A Study for the Public Colleges and Universities in Michigan*, Lansing, 1970 (issued every 2 years beginning with 1963–64).

MINTER, W. JOHN, AND G. BEN LAWRENCE, eds. *Management Information Systems: Their Development and Use in the Administration of Higher Education*, Western Interstate Commission of Higher Education, Boulder, Colo., 1969.

Notes on Pricing Within the University, Office of the Vice President, University of California, February 27, 1967.

PARDEN, ROBERT J., ed. *An Introduction to Program Planning, Budgeting and Evaluation for Colleges and Universities*, The University of Santa Clara Office of Institutional Planning, Santa Clara, Calif., July 1970, pp. 1–204.

PETERSON, MARVIN W. "The Potential Impact of PPBS on Colleges and Universities," *The Journal of Higher Education*, vol. XLII, no. 1, January 1971, pp. 1–20.

Program Classification Structure (Preliminary), Management Information Systems Program, Boulder, Colo., June 1970.

Quality and Equality: Revised Recommendations, New Levels and Federal Responsibility for Higher Education, The Carnegie Commission on Higher Education, McGraw-Hill, New York, June 1970.

SCHULTZ, THEODORE W. "Resources for Higher Education: An Economist's View," *The Journal of Political Economy*, vol. 76, no. 3, May/June 1968, p. 327.

SCHULTZE, CHARLES L., *et al. Setting National Priorities: The 1971 Budget*, The Brookings Institution, Washington, D.C., pp. 55–82.

SIEGEL, BARRY N. *Towards a Theory of the Educational Firm*, paper presented to the annual meeting of the Western Economic Association, Berkeley, Calif., August 1966.

WEATHERSBY, GEORGE. *The Development and Applications of a University Cost Simulation Model*, mimeo, Research Program in University Administration, Office of the Vice President for Planning and Analysis, University of California, June 1967.

WEINFELD, FREDERIC D. *Educational Quality, Definition and Measurement*, Technical Note No. 4, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Education Statistics, Division of Operations Analysis, Washington, D.C., September 2, 1966.

WENTWORTH, ERIC. "Money Squeeze Forces Change: Crisis and Reform at GWU," *The Washington Post*, November 23, 1970, p. 1.

The Inner Direction of Graduate Education

ABELSON, PHILIP H. "The Changing Job Market," *Science*, vol. 168, no. 3933, May 15, 1970.

BERELSON, BERNARD. *Graduate Education in the United States*, McGraw-Hill, New York, 1960.

BOERCKER, FRED D., LINDSEY R. HARMON, AND WILLIAM C. KELLEY. "Employment Status of Recent Recipients of the Doctorate," *Science*, vol. 168, May 22, 1970, pp. 930–39.

Careers of Ph. D.'s, Academic vs. Nonacademic: A Second Report on Follow-ups of Doctorate Cohorts, 1953–60, National Academy of Sciences, Washington, D.C., 1968.

CARTTER, ALLAN M. *An Assessment of Quality in Graduate Education: A Comparative Study of Graduate Departments in 29 Academic Disciplines*, American Council on Education, Washington, D.C., 1966.

———. "Future Faculty Needs and Resources," *Improving College Teaching*, Calvin B. T. Lee, ed., pp. 99–121, ACE, Washington, D.C., 1967.

———. *Graduate Education in a Decade of Radical Change*, Conference on Changing Patterns in Graduate Education, St. Louis, Mo., October 2–3, 1970.

———, AND ROBERT L. FARRELL. "Academic Labor Market Projections and the Draft," *The Economics and Financing of Higher Education in the United States*, Joint Economic Committee, 91st Congress, 1st Session, October 1969.

CHRICHTON, MICHAEL. "The Miseducation of Doctors," *New York Times*, October 16, 1970.

COOKE, W. D. *Some Questions on the Future of Graduate Education in the United States*. Cornell University, August 1969.

DOI, JAMES. "College and University Fiscal Administration in the 1970's: the Emergence of a New Frame of Reference," *Professional File*, July 1970.

"Employment Status of Recent Recipients of the Doctorate," *Science*, May 22, 1970.

EURICH, ALVIN C., LUCIEN B. KINNEY, AND SIDNEY G. TICKTON. *The Expansion of Graduate and Professional Education during the Period 1966 to 1980*, The Academy for Educational Development, Inc., April 1969.

A Fact Book on Higher Education, Fourth Issue, American Council on Education, Washington, D.C., 1969, pp. 191–93.

The Federal Financing of Higher Education, Association of American Universities, Report no. 2, Washington, D.C., 1969.

"Government Statistician Predicts Large Surplus of Teachers in the 70's," *Higher Education and National Affairs*, American Council on Education, vol. XVIII, no. 4, December 19, 1969.

Graduate Education: Parameters for Public Policy, National Science Board, National Science Foundation, Washington, D.C., 1969.

HALL, WAYNE C. *The Graduate Marketplace: Current Status and Future Projections,* mimeo, National Research Council, 1970, pp. 1–23.

HARMON, LINDSEY R., AND HERBERT SOLDZ. *Doctorate Production in United States Universities,* National Academy of Sciences, National Research Council, Publication no. 1142, Washington, D.C., 1963.

HEISS, ANN. *Challenges to Graduate Schools,* Jossey-Bass, San Francisco, Calif., 1970.

———. "Today's Graduate Student—Tomorrow's Faculty Member," *The Research Reporter,* Center for Research and Development in Higher Education, Berkeley, Calif., Summer 1969.

HENDERSON, ALGO D. "An Educator's View of the Goals Report," *Engineering Education,* vol. 59, no. 1, September 1968.

———. "Innovations in Education for the Professions," *Educational Record,* Summer, 1968, pp. 290–97.

———. "Social Change and Educating for the Professions," *School and Society,* vol. 98, February 1970, pp. 92–98.

HILGARD, ERNEST R. *Issues Bearing on Recommendations from the Behavioral and Social Science Survey Committee,* Stanford University, Stanford, Calif., Autumn 1969.

"Impact of Changes in Federal Science Funding Patterns on Academic Institutions," *Highlights,* National Science Foundation, Washington, D.C., October 15, 1970, pp. 1–8.

JENCKS, CHRISTOPHER, AND DAVID REISMAN. "Reforming the Graduate Schools," *The Academic Revolution,* Garden City, N.Y., 1969, pp. 510–43.

KATZ, JOSEPH, HAROLD A. KORN, CAROLE A. LELAND AND MAX LEVIN. *Class, Character, and Career Determinants of Occupational Choice in College Students,* Institute for the Study of Human Problems, Stanford University, Stanford, Calif., April 1969.

LEE, CALVIN, ED. *Improving College Teaching, Future Faculty Needs and Resources,* American Council on Education, Washington, D.C., 1966.

Manpower Report of the President: A Report on Manpower Requirements, Resources, Utilization, and Training, U.S. Department of Labor, Washington, D.C., 1970, esp. ch. 7, "Manpower Demand and Supply in Professional Occupations."

"Many More Ph.D.'s, Fewer Faculty Openings Lead to a 'Buyers Market' in Academe," *Chronicle of Higher Education,* January 12, 1970.

MAYHEW, LOUIS B. *Graduate and Professional Education, 1980,* Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

MEDSKER, LELAND L. *Progress Report 1965–1969,* The Center for Research and Development in Higher Education, University of California, Berkeley, August 1969, pp. 63–67.

MOONEY, JOSEPH D. *Attrition Among Ph.D. Candidates: An Analysis of a Cohort of Recent Woodrow Wilson Fellows,* Woodrow Wilson Foundation, Princeton, N.J., 1966.

MOSES, LINCOLN. "Enrollment Reduction in Ph.D.'s Next Year; Smaller Job Market," *Campus Report,* Stanford University, Stanford, Calif., April 1, 1970.

MOSHER, FREDERICK. *Professional Education in the Public Service,* Center for Research and Development in Higher Education, University of California, Berkeley, 1968.

NELSON, BRYCE. "A Surplus of Scientists? The Job Market is Tightening," *Science,* vol. 106, October 31, 1969.

"A New Look at the Supply of College Teachers," *Educational Record,* 1965.

"Ph.D. Registrants at New High, Jobs at New Low, College Registry Finds," *Higher Education and National Affairs,* American Council on Education, vol. XIX, no. 3, January 23, 1970.

Projections of Education Statistics to 1978–79, U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1970.

Report on the Conference on Predoctoral Education in the United States, Woods Hole Summer Studies Center, August 24–27, 1969, National Research Council, Washington, D.C.

Report on Federal Predoctoral Student Support, Part I: Fellowships and Traineeships, Federal Interagency Committee on Education, Student Support Study Group, Washington, D.C., April 1970.

ROSENSTEIN, ALLEN B. *A Study of a Profession and Professional Education,* The Final Publication and Recommendations of the UCLA Educational Development Program, December 1968.

Science and Engineering Doctorate Supply and Utilization 1968–80, National Science Foundation, Washington, D.C., 1969.

SCULLY, MALCOLM G. "Graduate-Study Growth Plans Are Challenged," *Chronicle of Higher Education,* vol. 5, no. 5, October 26, 1970.

SPURR, STEPHEN H. *Academic Degree Structures: Innovative Approaches (Principles of Reform in Degree Structures in the United States),* The Carnegie Commission on Higher Education, McGraw-Hill, New York, February 1970.

Students Enrolled for Advanced Degrees: Summary Data, Fall 1968 and *Preliminary Report, Fall 1969,* U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., 1970.

Summary Report 1969—Doctorate Recipients From U.S. Universities, Office of Scientific Personnel, National Research Council, Washington, D.C., 1970.

Support of Full-Time Graduate Students in the Sciences, Fall 1967, National Science Foundation, Washington, D.C., June 1969.

Toward a Public Policy for Graduate Education in the Sciences, National Science Board, National Science Foundation, Washington, D.C., 1969.

U.S. Manpower in the 1970's: Opportunity and Challenge, U.S. Department of Labor, Washington, D.C., 1970.

WALSH, JOHN. "Federal Graduate Aid: Down But Not Out," *Science,* vol. 168, June 26, 1970.

———. "Medical Education: Carnegie Panel Urges Expansion, Acceleration," *Science,* vol. 170, November 13, 1970.

WEINSTOCK, HENRY ROBERT. "A Critique of Criticisms of Vocationalism," *Educational Forum,* vol. 32, January 1968.

WILSON, KENNETH M. *Of Time and The Doctorate,* Southern Regional Education Board. Research Monograph No. 9, Atlanta, Ga., 1965.

The Unfinished Experiment in Minority Education

"Admission of Minority Freshmen Increases 25 Percent at 129 Midwestern Institutions," *The Chronicle of Higher Education,* July 6, 1970.

"Admission of Minority Students in Midwestern College," *Higher Education Surveys,* Report M–1, College Entrance Examination Board, New York, May 1970.

Aspirations, Enrollments, and Resources, The Challenge to Higher Education in the Seventies, U.S. Department of Commerce, Bureau of the Census, Joseph Froomkin, Washington, D.C., 1970, chs. 2, 4 and 9.

Association of American Medical Colleges Task Force Report to the Inter-Association Committee on Expanding Educational Opportunities in Medicine for Blacks and Other Minority Students, Stanford University, Stanford, Calif., April 22, 1970.

ASTIN, ALEXANDER W. "Folklore of Selectivity," *Saturday Review,* December 2, 1969.

———. Racial Considerations in Admissions," *The Campus and the Radical Crisis,* American Council on Education, 1969.

———, JOHN A. CREAGER, et al. *National Norms for Entering College Freshmen, Fall 1969* and *Fall 1970,* and unpublished revisions, 1969, *ACE Research Reports,* vol. 4, no. 7 and vol. 5, no. 6 Office of Research, American Council on Education, Washington, D.C.

AURBACH, HERBERT A., ESTELLE FUCHS, AND GORDON MACGREGOR. *The Status of the American Indian,* Pennsylvania State University. An Interim Report of the National Study of American Indian Education to the Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C., January 1970.

BAYER, ALAN E., AND ROBERT F. BORUCH. "Black and White Freshmen Entering Four-Year Colleges," *Educational Record,* American Council on Education, Washington, D.C., Fall 1969.

BAYER, ALAN E., ALEXANDER W. ASTIN, AND ROBERT F. BORUCH. "Social Issues and Protest Activity: Recent Student Trends," *ACE Research Reports,* vol. 5, no. 2, Office of Research, American Council on Education, Washington, D.C. February 1970.

"The Black Agenda for Higher Education," *College Board Review,* no. 71, College Entrance Examination Board, New York, Spring 1969.

"The Black Student in American Colleges," *ACE Research Reports,* vol. 4, no. 2, Office of Research, American Council on Education, Washington, D.C., 1969.

"Blacks Admitted in 1965 Exceed Graduation Record for Class," *Campus Report,* vol. II, No. 36, Stanford University, Stanford, Calif., 1970.

"Blacks Enter the 70's With a Larger But Still Lagging Share in the American Economy," *U.S. Manpower in the 1970's: Opportunity and Challenge,* U.S. Department of Labor, Washington, D.C., 1970.

BLACKWELL, DAVID, *et al.* "Freshman Special Action Admissions, Fall, 1966, 1968, 1969," University of California, Berkeley, May 12, 1970.

BOWLES, FRANK, and FRANK A. DACOSTA. *Between Two Worlds, A Profile of Historically Negro Colleges,* The Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970, May 12, 1970.

Brown University, Ford Foundation Special Admissions Study Project, Providence, R.I.:

DOEBLER, CHARLES H. *New Measures for Admission: An Abridgement and an Interpretation of the Study of Admission Criteria and Risks at Brown University,* April 1970.

NICHOLSON, EVERARD. *Success and Admission Criteria for Potentially Successful Risks,* March 1970.

Carnegie Commission on Higher Education, *A Chance to Learn, An Action Agenda for Equal Opportunity in Higher Education,* McGraw-Hill, New York, March 1970.

———. *Quality and Equality: New Levels of Federal Responsibility for Higher Education,* McGraw-Hill, New York, December 1968.

———. *Quality and Equality: Revised Recommendations—New Levels of Federal Responsibility for Higher Education,* McGraw-Hill, New York, June 1970.

———. *From Isolation to Mainstream,* McGraw-Hill, New York, February 1971.

Columbia University, Teachers College, *Study of Collegiate Compensatory Programs for Minority Group Youth*, New York:

GORDON, E. W. "Survey of Special Collegiate Programs," draft.

KENTRICK, S. A. and CHARLES L. THOMAS. "Transition from School to College," February 1970.

LAPATE, CAROL. "The College Readiness Program: A Program for Third World Students at the College of San Mateo, California," 1970.

CREAGER, JOHN A., ALEXANDER W. ASTIN, ROBERT F. BORUCH, ALAN E. BAYER, and DAVID E. DREW. "National Norms for Entering College Freshmen, Fall, 1969," *ACE Research Reports*, vol. 4, no. 7, Office of Research, American Council on Education, Washington, D.C.

Directory of Predominantly Negro Colleges and Universities in the United States of America (Four-Year Institutions Only), Plans for Progress (Now National Alliance of Businessmen), January 1969.

EGERTON, JOHN. *State Universities and Black Americans: An Inquiry into Desegregation and Equity for Negroes in 100 Public Universities*, Southern Education Reporting Service, May 1969.

El Plan de Santa Barbara: A Chicano Plan for Higher Education, Chicano Coordinating Council, La Causa Publications, Oakland, Calif., October 1969.

Equality of Educational Opportunity (James S. Coleman, *et al.*), U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C. 1966.

ETZIONI, AMITAI, AND MURRAY MILNER. *Higher Education In An Active Society: A Policy Study*, Bureau of Social Science Research Inc., Washington, D.C., March 1970.

GREEN, ROBERT L. *The Admission of Minority Students: A Framework for Action*, Center for Urban Affairs, Michigan State University, East Lansing, Mich., October 22, 1970.

———. "The Black Quest for Higher Education: An Admissions Dilemma," *The Personnel and Guidance Journal*, vol. 47, no. 9, May 1969, pp. 905–11.

———. *Minority Group Students at Predominantly White Universities: Needs and Perspectives*, Center for Urban Affairs, Michigan State University, East Lansing, Fall 1970.

HARRIS, JOHN, AND JOHN REITZEL. "Negro Freshman Performance in a Predominantly Non-Negro University," *Journal of College Student Personnel*, vol. 8, no. 6, November 1967.

HASSETT, SUZANNE, AND EOIN W. TREVELYAN. *Needy Students at Black Colleges—A Study of Student Finances*, Atlanta, Ga., March 1970.

Higher Education for Everybody? Issues and Implications, American Council on Education, Washington, D.C., background papers for 1970 annual meeting, St. Louis, Mo., October 7–9, 1970.

JAFFE, A. J., WALTER ADAMS, AND SANDRO G. MEYERS. *Negro Higher Education in the 60's*, F. Praeger, New York, 1968.

KITANO, HARRY H. L., AND DOROTHY L. MILLER. *An Assessment of Education Opportunity Programs in California Higher Education*, Scientific Analysis Corporation, San Francisco, Calif., February 1970.

MCGRATH, EARL J. *The Predominantly Negro Colleges and Universities in Transition*, published for Institute of Higher Education by Bureau of Publications, Teachers College, Columbia University, New York, 1965.

Minority Student Access to Higher Education, Ford Foundation, New York, September 1970.

MOTHERSHEAD, ANN, compiler. *Special Program Task Force Report and Evaluation April 1968–June 1970,* Stanford University, Stanford, Calif., June 1970; *Summary and Recommendations,* June 1970.

MOYNIHAN, DANIEL P. "Memorandum for The President," The White House, Washington, D.C., January 16, 1970.

POWELL, JOANN. "Higher Education for the Black Student," *Journal of College Student Personnel,* vol. II, no. 1, January 1970.

PRUITT, ANNE S. "Black Poor at White Colleges, Personal Growth Goals," *Journal of College Student Personnel,* vol. 11, no. 1, January 1970.

"Public Black Colleges Show Enrollment Gain of 9 Percent This Fall," *Higher Education and National Affairs,* vol. XIX, no. 4, November 13, 1970.

"Public Colleges' Negro Entrants Rise Sharply," *The Chronicle of Higher Education,* April 13, 1970.

RIESMAN, DAVID, AND CHRISTOPHER JENKS. "Negroes and Their Colleges." *The Academic Revolution,* Garden City, N.Y., 1969, chs. 3 and 4.

Spanish Surnamed American College Graduates, U.S. Cabinet Committee on Opportunity for the Spanish Speaking, Washington, D.C., 1970.

"A Story of Project Talent," *A National Inventory of Aptitudes and Abilities,* Bulletin #1, a survey through the University of Pittsburgh, Pittsburgh, Pa., November 1959.

THOMAS, CHARLES L., AND JULIAN S. STANLEY. "Effectiveness of High School Grades for Predicting College Grades of Black Students: A Review and Discussion," *Journal of Educational Measurement,* vol. 6, no. 4, Winter 1969.

TRINCHERO, ROBERT L. "Descriptive Academic Information Regarding the 1968–1969 Special Admissions Group at California State College, Hayward," *Student Services Report #3,* 1969–70, California State College, Hayward, October 21, 1969.

Undergraduate Enrollment by Ethnic Group in Federally Funded Institutions of Higher Education, U.S. Department of Health, Education, and Welfare, Office for Civil Rights, Washington, D.C., Fall 1968.

WILLINGHAM, WARREN W. *Free-Access Higher Education,* College Entrance Examination Board, New York, 1970.

Barriers to Women

Affirmative Action Programs—HEW Enforcement of Equal Employment for Women, Association of American Universities, Washington, D.C., December 1970.

American Science Manpower 1968. A Report of the National Register of Scientific and Technical Personnel, U.S. Government Printing Office, Washington, D.C., 1970.

ASTIN, HELEN S. *The Woman Doctorate in America: Origins, Career, and Family,* Russell Sage Foundation, New York, 1969.

BERNARD, JESSIE. *Academic Women,* Pennsylvania State University Press, 1964, p. 303.

BOWEN, WILLIAM, AND T. A. FINIGAN. *Economics of Labor-Force Participation,* Princeton University Press, 1968.

BUNTING, MARY. "Huge Waste: Educated Womenpower," *New York Times Magazine,* May 7, 1961, p. 231.

———, PATRICIA A. GRAHAM, AND ELGA R. WASSERMAN. "Academic Freedom and Incentive for Women," *Educational Record,* Fall 1970, pp. 386–91.

Careers of Ph.D.'s, Academic vs. Nonacademic, A Second Report on Followups of Doctorate Cohorts, 1935–60, National Academy of Sciences, Washington, D.C., 1968.

Changing Patterns: A Report on the Federal Women's Program Review Seminar, U.S. Civil Service Commission, Washington, D.C., 1969.

COHEN, AUDREY C. *Women and Higher Education: Recommendation for Change*, College for Human Services, New York, August 1970.

College Women Seven Years After Graduation: Class of 1957, Bulletin 292, U.S. Department of Labor, Women's Bureau, U.S. Government Printing Office, Washington, D.C., 1966.

CROSS, NANCY JEWELL. "Relative Total Money Incomes by Sex-Race of People Paid for Full-Time All-Year Work, USA 1939–1969," *People's Advocate*, Menlo Park, Calif., 1970.

Discrimination Again Women in Colleges, a special report by The Commission on Federal Relations, the American Council on Education, September 1970, pp. 1–4.

DOLAN, C. F., and M. P. DAVIS. "Antinepotism Rules in American Colleges and Universities," *The Educational Record*, 1960, pp. 285–95.

Draft Report by the Committee on the Status of Women, American Historical Association, Washington, D.C., November 9, 1970.

DUNBAR, E. "Mother Returns to the Campus: Minnesota Plan for the Continuing Education of Women," *Look*, October 23, 1962.

"Earned Degrees," *A Fact Book on Higher Education*, Fourth Issue, American Council on Education, Washington, D.C., 1969.

EPSTEIN, C. F. *Woman's Place*, University of California Press, Berkeley, 1970.

Equal-Pay Primer: Some Basic Questions, Leaflet 20, U.S. Department of Labor, Women's Bureau, U.S. Government Printing Office, Washington, D.C., January 1963.

Fact Sheet on the Earnings Gap, U.S. Department of Labor, Women's Bureau, Washington, D.C., February 1970.

Fifteen Years After College: A Study of Alumnae of the Class of 1945, Bulletin 283, U.S. Department of Labor, Women's Bureau, Washington, D.C., 1962, p. 9.

First Jobs of College Women: Class of 1957, Bulletin 268, U.S. Department of Labor, Women's Bureau, U.S. Government Printing Office, Washingto, D.C., 1959, pp. 6–7.

"Goals and Timetables for Women Slated in U.S. Contracts to Achieve Job Equality," *Wall Street Journal*, August 3, 1970.

GRAHAM, PATRICIA ALBJERG. "Women in Academe," *Science*, vol. 169, September 1970, pp. 1284–90.

GRAUBARD, STEPHEN R., ed. "The Woman in America," *Daedalus*, Journal of the American Academy of Arts and Sciences, vol. 93, no. 2, Spring 1964, p. 625.

GRUCHOW, N. "Discrimination: Women Charge Universities, Colleges, With Bias," *Science*, 168:559–61, May 1, 1970.

1969 Handbook on Women Workers, Bulletin 294, Women's Bureau, U.S. Department of Labor, Washington, D.C., 1969.

HARMON, LINDSEY R. "High School Ability Patterns, A Backward Look from the Doctorate," *Scientific Manpower Report*, no. 6, Office of Scientific Personnel, National Research Council, Washington, D.C., 1965.

HARRIS, ANN SUTHERLAND. "The Second Sex in Academe," *AAUP Bulletin*, Fall 1970, pp. 283–95.

HEDGES, J. N., "Women Workers and Manpower Demands in the 1970's," *Monthly Labor Review*, vol. 93, June 1970, pp. 19–29.

HORNER, MATINA. "A Bright Woman Is Caught in a Double Bind," *Psychology Today*, vol. 3, no. 36, November 1969, p. 62.

"The Increasing Number of Working Women Underscores the Need for Day Care, Continuing Training," *U.S. Manpower in the 1970's: Opportunity and Challenge,* U.S. Department of Labor, Washington, D.C., 1970.

Journal of the National Association of Women Deans and Counselors, a department of the National Education Association, vol. 31, no. 2, Winter 1968.

KATZ, JOSEPH, HAROLD A. KORN, CAROLE A. LELAND AND MAX M. LEVIN. *Class, Character, and Career Determinants of Occupational Choice in College Students,* Institute for the Study of Human Problems, Stanford University, Stanford, Calif., April 1969.

KAUFMAN, SUSAN B. "Few Women Get Positions of Power in Academe, Survey Discloses," *The Chronicle of Higher Education,* vol. V, no. 10, November 30, 1970, p. 1.

KENISTON, ELLEN AND KENNETH KENISTON. "American Anachronism: The Image of Women and Work," *American Scholar,* vol. 33, no. 3, Summer 1964, pp. 355–77.

LELAND, C. A., AND M. M. LOZOFF. *College Influences on the Role Development of Undergraduates,* Institute for the Study of Human Problems, Stanford University, Stanford, Calif., 1969, pp. 46–90.

"Men, Women: Declaration on the Elimination of Discrimination Against Women," *UNESCO Courier,* vol. 21, November 1968, pp. 30–31.

OSOFSKY, JOE AND HAROLD FELDMAN. *Fact Sheet on Women,* HD and FS 390, unpublished, Cornell University, Ithaca, N.Y.

OLTMAN, RUTH M., "Campus 1970, Where Do Women Stand?" *Research Report of a Survey on Women in Academe,* American Association of University Women, Washington, D.C., December 1970.

"Part Time Employment," *U.S. Manpower in the 1970's: Opportunity and Challenge,* U.S. Department of Labor, Washington, D.C. 1970.

PETERSON, ESTHER. "Status of Women in the U.S., *International Labor Review,* vol. 89, May 1964, pp. 447–60.

A Matter of Simple Justice, President's Task Force on Women's Rights and Responsibilities, U.S. Government Printing Office, Washington, D.C., April 1970.

Report of the Committee on Private Employment, President's Commission on the Status of Women, Washington, D.C., U.S. Government Printing Office, October 1963, appendix F, pp. 145–47.

Report of the Subcommittee on the Status of Academic Women on the Berkeley Campus, Office of the Academic Senate, University of California, Berkeley, May 19, 1970.

Report on Federal Enforcement of Equal Employment for Women in Educational Institutions, American Association of State Colleges and Universities, Washington, D.C., December 4, 1970.

"Revolution II: Thinking Female," *College and University Business,* McGraw-Hill, New York, February 1970.

RIESMAN, DAVID. "Some Dilemmas of the Educated, Especially Women," Convocation Address at Chatham College, September 16, 1969.

ROE, ANNE. "Women in Science," *Personnel Guidance Journal,* vol. 44, no. 8, April 1966, p. 784.

ROSSI, ALICE. "Job Discrimination and What Women Can Do About It," *Atlantic* vol. 255, March 1970, pp. 99–102.

———. "Status of Women in Graduate Departments of Sociology: 1968–69," *Science,* vol. 166, 1969, p. 356.

SEMAS, PHILIP W. "55 Campuses Now Offering Courses in Women's Studies," *The Chronicle of Higher Education,* vol. V, no. 10 November 30, 1970.

"Sex Discrimination Campuses Face Contract Loss Over HEW Demands," *Science*, November 20, 1970.

SHAFFER, H. G., AND J. T. SHAFFER. "Job Discrimination Against Faculty Wives," *Journal of Higher Education*, 1966, pp. 10–15.

SHERWOOD, JOHN J. "Self-Identity and Referent Others," *Sociometry*, vol. 28, 1965, pp. 66–81.

SIMON, RITA, SHIRLEY MERRITT CLARK, AND KATHLEEN GALWAY, "Women Ph.D.'s, A Recent Profile," *Social Problems*, vol. 15, no. 2, Fall 1967, pp. 221–36.

Summary Report 1969—Doctorate Recipients from U.S. Universities, Office of Scientific Personnel, National Research Council, Washington, D.C., 1970.

Trends in Educational Attainment of Women, U.S. Department of Labor, U.S. Government Printing Office, Washington, D.C., October 1969.

TURNER, RALPH H. *"Some Aspects of Women's Ambition," American Journal of Sociology*, vol. 70, no. 3, November 1964, pp. 271–85.

"United States: An Interdepartmental Committee and A Citizen's Advisory Council on the Status of Women," *International Labor Review*, vol. 89, March 1964, p. 286.

WHITE, MARTHA S. "Psychological and Social Barriers to Women in Science," *Science*, October 23, 1970, pp. 413–16.

Woman's Destiny: Choice or Chance? Report of a conference at the University of Washington, Seattle, November 21–22, 1963, U.S. Department of Labor, Women's Bureau, Washington, D.C., U.S. Government Printing Office, 1963, p. 49.

WOODRING, PAUL. "Sexism on the Campus: Women's Rights in Teaching and Administrative Positions," *Saturday Review*, May 16, 1970.

The Credentials Monopoly

BERG, IVAR E. *Education and Jobs: The Great Training Robbery*, Praeger Publishers, New York, 1970.

———. "Rich Man's Qualifications for Poor Man's Jobs," *Trans-Action*, March 1969.

CLARK, BURTON R. "The 'Cooling Out' Function in Higher Education," *American Journal of Sociology*, May 1960, pp. 569–76.

COHEN, AUDREY. *New Tests to Measure Job Skills and Determine Effective Performance*, College for Human Services, New York, 1970.

DRUCKER, PETER. "Has Success Spoiled the Schools?" and "The Knowledge Economy," *The Age of Discontinuity*, Harper & Row, New York, 1969.

ETZIONI, AMITAI, AND MURRAY MILNER. *Higher Education in an Active Society: A Policy Study*, Bureau of Social Science Research, Inc., Washington, D.C., March 1970.

HOYT, DONALD P. "The Relationship Between College Grades and Adult Achievement: A Review of the Literature," *Research Reports*, no. 7, American College Testing Service, Fall 1965.

JAFFE, A. J., AND WALTER ADAMS. *Social and Economic Characteristics of the College Population and Others With College Training*, Bureau of Applied Social Research, Columbia University, 1965.

JENCKS, CHRISTOPHER, AND DAVID RIESMAN. "Social Stratification and Mass Higher Education," *The Academic Revolution*, Garden City, N.Y., 1969, pp. 61–64.

LIVINGSTON, STERLING. "Myth of the Well Educated Manager," *Harvard Business Review*, January–February 1971.

MILLER, S. M. "Alternatives to Schools," *New York University Education Quarterly*, vol. 1, no. 4, Summer 1970.

———, and MARSHA KROLL. "Strategies for Reducing Credentialism," *Action for Change in Public Service Careers*, New York, Summer 1970.

SPURR, STEPHEN. *Academic Degree Structures: Innovative Approaches*, Carnegie Commission on Higher Education, McGraw-Hill, New York, 1970.

U.S. Department of Labor, Bureau of Labor Statistics. *Bulletin No. 1650*, 1970–71.

———. *College-Educated Workers, 1968–80: A Study of Supply and Demand.* Bulletin No. 1676, 1970.

U.S. Department of Labor, Manpower Administration. "Occupational Licensing and the Supply of the New Professional Worker," *Manpower Research Monograph No. 11*, Washington, D.C.

Everybody's Answer: The Community College

BIRENBAUM, WILLIAM M. *A Time for Reconstruction: A Specific Proposal for a New Kind of College for Our New Urban Society . . . and for an Institute for Universal Advanced Education to Coordinate and Consolidate Secondary and Higher Education in the City of New York*, Inaugural Address at Staten Island Community College, N.Y., September 30, 1969.

"Black Students Found Relying on Community Colleges," *Chronicle of Higher Education*, Washington, D.C., April 6, 1970.

"A Call for More and Better Community Colleges," *New York Times*, June 28, 1970.

Carnegie Commission on Higher Education. *The Open-Door Colleges: Policies for the Community Colleges*, McGraw-Hill, New York, 1970.

"Carnegie Fund Favors Community Colleges," *New York Times*, June 26, 1970.

COSAND, JOSEPH. "The Community College in 1980," *Campus 1980*, ed. by Alvin Eurich, Delacorte, New York, 1968, p. 37.

CROSS, K. P. *The Junior College Student: A Research Description*, Educational Testing Service, Princeton, N.J., 1968.

———. *The Role of the Junior Colleges in Providing Post-Secondary Education for All*, Center for Research and Development in Higher Education, University of California, Berkeley, 1969.

DEVALL, W. B. "Community Colleges: A Dissenting View," *Educational Record*, Spring 1968, pp. 168–72.

Feasibility and Desirability of Eliminating Lower Division Programs at Selected Campuses, Coordinating Council for Higher Education, State of California, Sacramento, January 1967, p. 42.

FELDMAN, MARVIN J. *Making Education Relevant*, Ford Foundation, prepared for Governor's Conference on Education, Rutgers University, N.J., April 2, 1966.

GERNHART, JACK C. "An Analysis," *Junior College Directory*, 1969, p. 6.

GLEAZER, EDMUND J., Jr. "The Community College Issue of the 1970's," *Educational Record*, Winter 1970, pp. 47–52.

MEDSKER, LELAND L., and DALE TILLERY. *Breaking The Access Barrier: A Profile of the Two-Year Colleges*, Carnegie Commission on Higher Education, McGraw-Hill, New York, 1971.

MOORE, WILLIAM, Jr. *Against the Odds: The High-Risk Student in the Community College*, Jossey-Bass, San Francisco, 1970.

MORSCH, WILLIAM. *Seven State Systems of Community Colleges: California, Florida, Illinois, Michigan, New York, Texas, Washington*, prepared for Bureau of Social Science Research, Washington, D.C., 1970.

MULLER, STEVEN. *Aspects of Higher Education in Developing Countries,* prepared for the 17th Conference on Science and World Affairs, Sweden, September 3–8, 1967.

MUSIKO, PETER, Jr. "A Rebuttal to W. B. Devall's 'Community Colleges: A Dissenting View'," *Educational Record,* Spring 1962, pp. 173–76.

"The Need for Vocational and Technical Education Personnel," *The Education Professions 1969–70* U.S. Department of Health, Education, and Welfare, Office, of Education, Washington, D.C., September 1970.

Review of Junior College Finance, Report no. 69–2, Coordinating Council for Higher Education, Sacramento, Calif., February 4, 1969.

Study of Community Colleges and Vocational-Technical Centers, Phase 1 Report, Bureau of Social Science Research, Washington, D.C., 1971.

TILLERY, DALE. *Variations and Change in Community College Organization: Preliminary Report to the Presidents of the California Community Colleges,* the Junior College Leadership Program and the Center for Research and Development in Higher Education, University of California, Berkeley, September 1970.

———, AND LELAND MEDSKER. *A Profile of American Junior Colleges,* McGraw-Hill, New York (in press).

TRENT, JAMES W., AND LELAND MEDSKER. *Beyond High School,* Jossey-Bass, San Francisco, 1968.

"The Two-Year College and the 'New Student'," *The Educational Professions 1969–1970,* U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C., September 1970.

Stimulating Ideas

ARROWSMITH, WILLIAM. "The Idea of a New University," *The Center Magazine,* March 1970, pp. 47–60.

AXELROD, JOSEPH. "An Experimental College Model," *Educational Record,* vol. 48, Fall 1967.

BENNIS, WARREN. "Arribismo," *The Research Reporter,* vol. V, no. 3, The Center for Research and Development in Higher Education, University of California, Berkeley, 1970.

BIRENBAUM, WILLIAM. *New Experimental Curriculum and Organization at Staten Island Community College,* Staten Island Community College, Staten Island, N.Y., 1970.

"Campus Revolution, Johnston College Style," *Think,* September/October 1970.

CANNON, WILLIAM B. *New Federal Rationale and Programs in Higher Education,* University of Chicago, 1970.

The Center for Creativity and Growth, Palo Alto, Calif., Summer/Fall 1970.

COHEN, AUDREY C. *Human Service Institutes: An Alternative for Professional Higher Education,* College for Human Services, New York, March 1970.

"A College Moves Off Campus to Teach," *U.S. News and World Report,* August 17, 1970, pp. 46–47.

GIBBONS, JAMES F. *New Structures for Higher Education Employing Educational Television,* Stanford University, Stanford, Calif., 1970.

HECHINGER, FRED M. "Degrees: How to Get One Without Leaving Home," *New York Times,* November 1, 1970.

———. "Much Talk But Little Action on Campus Reform," *New York Times,* August 9, 1970.

HEFFERLIN, LON. "End Runs and Line Bucking," *The Research Reporter,* vol. V, no. 3, The Center for Research and Development in Higher Education, University of California, Berkeley, 1970.

HEINZERLING, LYNN. "Britain's 'Dropout' University—Home To Be Campus for 25,000," *Los Angeles Times,* October 18, 1970.

"HEW May Soon Help Expand 'Colleges Without Walls'," *Washington Post,* November 12, 1970.

Human Services: A Syllabus, College for Human Services, New York, November 1969.

"If You're Not Part of the Solution . . . You're Part of the Problem," VISTA, Office of Economic Opportunity Pamphlet 4100–2, April 1969.

KELLY, MARY. "New College Stresses Community Concern," *The Christian Science Monitor,* June 3, 1970.

TIEP, BRIAN L., M.D. *Technical Innovation and Entrepreneurship Program,* Prescott College, Prescott, Ariz., 1970.

University Instructional Television Networks—The Need for Federally Guaranteed Loans, mimeo, Office of the Vice President for Programs and Projects, University of Chicago, 1970.

University of Illinois—Chicago Circle—Instructional Television Network Financial Plans, mimeo, Office of the Vice President for Programs and Projects, University of Chicago, 1970.

University Without Walls—A Proposal for an Experimental Degree Program in Undergraduate Education, Union for Experimenting Colleges and Universities, Antioch College, Yellow Springs, Ohio, September 28, 1970.

WARD, F. CHAMPION. "Higher Education in the 70's: How Strait the Gate?" Address given at the 1969 annual meeting of the College Board, Washington, D.C.

WOOLDRIDGE, ROY L., *Cooperative Education,* Northeastern University, Boston, Mass., May 1969.

U.S. GOVERNMENT PRINTING OFFICE:1971 O—421-636